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SUMERS' RESEARCH

Bulletin

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CONSUMERS' RESEARCH

Vol. 13 • No. 5 **BULLETIN** May 1944

Off the Editor's Chest

CONSUMERS may well be grateful to the Senate's Truman Committee investigating the national defense program, for vigorous advocacy of the importance of caring for consumers' essential needs with respect to goods and services. It has been known for some months that surpluses of many materials were growing and that the labor supply situation was easing in a number of areas; all the while the War Production Board, instead of acting promptly and forthrightly in the light of this situation, merely announced another program for studying the possibilities of reconversion of manufacturing facilities to civilian production. Although there has been considerable grumbling, mostly at the minor deprivations of wartime, such as the lack of bobby pins and the high ration-point values of butter, most consumers have accepted various official pronouncements that "all-out" conversion to military supplies and equipment was an unavoidable and necessary part of the deprivations connected with war.

When unemployment, however, made its appearance in portions of the steel industry, and in small arms and ammunition plants, and supplies of aluminum started to pile up, even those who were totally unfamiliar with the techniques and demands of large scale production began to wonder why it was not possible under the circumstances to relax some of the stringent controls preventing production of many of the most essential types of mechanical and electrical articles and permit the production of at least some vitally needed repair parts for washing machines, mechanical refrigerators, and radio sets. The waste of time, money, and energy involved in the unavailability of such items is evident to all. In December 1942, for example, it took from three weeks to four months to secure temperature control units for mechanical refrigerators, and about as long to obtain a new heating unit to replace a burnt-out unit of an electric range. Washing machine repair parts were especially needed because of the overloaded conditions in commercial laundries, yet some of the most essential parts were practically unobtainable, likewise workmen to install them.

In these days when gasoline rationing tightly restricts local travel, and transportation to more distant places is limited by numerous other factors, the ready availability of the home radio is a prime necessity, not only as a source of family entertainment, but as an instantly available channel of communication and information. Yet it is estimated that over a million and a half farm battery sets alone are silent for lack of B batteries or because of burnt-out tubes for which no replacements are available. The great majority of farms must depend upon such radios, since they do not have connections to electric power networks. The radio is of peculiar importance to the farmer because of his need for prompt crop and weather reports, and information regarding changes in rationing rules and restriction orders affecting farm production and marketing. The radio tube situation, too, has been in a mess for months. Millions of tubes are needed, and have been promised, but still do not arrive. End-

(Continued on page 24)

Scientific and Technical Experts and Editors: F. J. Schlink, R. Joyce, M. C. Phillips, A. R. Greenleaf, and Charles L. Bernier. Editorial Assistant: Mary F. Roberts.

Symbols used to indicate sources of data and bases of ratings: A—recommended on basis of quality; AA—regarded as worthy of highest recommendation; B—intermediate with respect to quality; C—not recommended on basis of quality; cr—information from Consumers' Research's own tests or investigations; 1, 2, 3—relative prices, 1 being low, 3 high. Note that price and quality are completely differentiated in CR's listings; **a quality judgment is independent of price**; 43, 44—year in which test was made or information obtained or organized by the staff of Consumers' Research.

It will be advantageous if you will, whenever possible, send prompt notice of change of address at least a month before it is to take effect, accompanying your notice with statement of your old address with name in full. At least three weeks' notice must be given in any case. This rule, however, regarding long advance notice does not apply to military personnel. *Changes of address for men and women in the services will gladly be handled whenever required.*

★ ★ ★ For a brief cumulative index of 1944 BULLETINS preceding this issue, see page 26.

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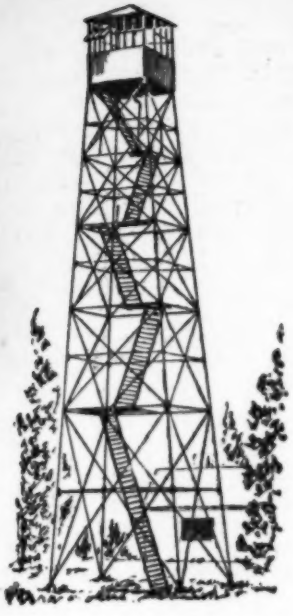

The Consumers' Observation Post

THE TOILET SOAP currently available is somewhat different in quality from the pre-war soap, as many consumers are discovering for themselves. One researcher reports that the soap companies have been obliged to change formulas rather frequently as certain materials disappear from the market and others appear to take their place. Some palm oil and olive oil is available from time to time and a little coconut oil, formerly shipped extensively from the Philippines, is coming through from South America. Lard is the fat most abundantly available, although it is not one of the most desirable constituents of first-quality soap. So much rosin, formerly considered an undesirable adulterant, is being used that the "naval stores" industry has secured a new lease on life. Changes in familiar brands occur without notice and so far the changes have not been in the direction of a higher quality product.

* * *

CANNED FOOD is still reported to be in oversupply. The canners are clamoring for a four-month ration holiday. It appears that rather than allow ration points to go to waste many housewives have built up stocks to such an extent that some pantry shelves look like a small grocery store. On the other hand, one trade survey indicates that somewhat fewer vegetables will be canned by commercial canners in 1944 partly because of price ceilings and partly because of the current carry over from last season's pack.

* * *

MILK is a frequent cause of gastro-intestinal disturbances in children whose mothers have been indoctrinated with the belief that "a quart of milk a day" is essential for their health and welfare. The result is that too little meat, fruit, and vegetables can be eaten by the child who is forced to consume so much milk. The Southern Medical Journal has published the findings of two researchers which indicate that overconsumption of milk by the mother in the last few months of pregnancy and the use of cows' milk in whole or in part for feeding the infant from the beginning have been responsible for constipation, colic, flatulence, restlessness and crying during the early months, followed by severe constipation in the second and subsequent years of childhood. These conditions were frequently accompanied by lassitude, fatigue, poor posture, and pallor in a large number of cases studied.

* * *

QUALITY FABRICS AND CLOTHING OF GOOD QUALITY are in great demand in spite of high prices. Even when lower-priced garments are available, the better garments at the higher price get the customer's preference--reports one merchandise columnist. Another writer estimates that whereas ten years ago the male customer had an even chance of getting his money's worth, today's odds are more like three to five and are evidently getting slimmer every day. One of the most disliked results of conservation measures in the men's wear field is the new government-approved type of shirt with the short tail. Retail stores are advised to keep their stock of such shirts very low for it is predicted that men will stop buying them as soon as they have a chance to get anything better.

* * *

OUTDOOR SPORTS ENTHUSIASTS will have scant supplies of equipment in most fields this summer. In fact there is a shortage of athletic equipment for Army rest camps in certain areas. Golf clubs have not been manufactured since May 1942, although a few months ago the WPB permitted their assembly from parts

that were on hand at that time. Balls must be reprocessed from old balls, and it takes about 100 used balls to make 80 new ones, according to a survey made by the Wall Street Journal. Tennis balls are being made from synthetic rubber with fairly satisfactory results. Tennis rackets are reported in adequate supply, as are baseballs. The core of this year's official baseball will have to be of synthetic rubber and cork, but the cork will be real. Stocks of reels and rods are low, but supplies of ammunition for hunting are expected to be somewhat greater than they were last year. One outdoor sport, however, that is open to nearly everyone is victory gardening, for garden tools will be available.

* * *

ICE REFRIGERATORS will continue to be manufactured by permission of the WPB. The reason given is that the refrigerating performance of the present type "has been so satisfactory"--to use the words of the official announcement --that no changes in materials or specifications are contemplated. CR's tests of several of these ice boxes reported in July 1943 indicated that only one of the three models came near to maintaining a temperature of 45 degrees in the food compartment and that the other two would be definitely unsatisfactory for use at normally high summer temperatures, although one of the boxes might do in a cool climate where the mean daily temperatures did not often rise above 75°F. For those who have no other facilities for keeping perishable food for a short time, these ice boxes may be better than nothing, but they should be considered as only a makeshift solution to the problem, regardless of the WPB's opinion of the quality of their specifications and performance.

* * *

CREAM is difficult to whip these days because of government restrictions on the amount of butterfat that it may contain when sold at retail. There is not enough fat in 19 percent cream to produce whipped cream of satisfactory stiffness even if the fat is well clumped, according to a study by the New York State Agricultural Experiment Station. The Station researcher suggests that the addition of gelatin may give the desired stiffness, using one cup of cold light cream, two tablespoonfuls of sugar, one level teaspoonful of gelatin, and vanilla to flavor. Directions call for putting about two tablespoonfuls of cold water in a small pan and sprinkling the gelatin on it. Soak for a few minutes and heat to 140°F to dissolve the gelatin. Place the cream in a dish and stir the gelatin into it. Let stand in the refrigerator for one to two hours to allow the gelatin to set. Remove and whip, adding the sugar either before or after whipping, and flavor with vanilla.

* * *

COTTON TEXTILES continue to be difficult to obtain in nearly all lines. It is felt in some merchandise circles that even if the war in Europe were to end suddenly, the demand for cotton textiles would likely outstrip the supply. The situation with respect to sheets has improved slightly, although it has been suggested that hospitals should take care not to overstock, and so avoid cutting down on supplies available for consumers. Towels of various types, printed tablecloths, filet lace cloths, and cotton bedspreads of attractive design and good quality are hard to find. Shortage of help rather than scarcity of raw materials is blamed for falling fabric production.

* * *

TRANSPARENT CRYSTALS that look like glass and that many have thought represented careless or malicious adulteration of the product are sometimes found in canned sea food. These are soluble crystals of magnesium ammonium phosphate, otherwise known as struvite. The crystals form naturally in canned sea food and are not harmful in the small quantities found in a single can. A simple test to differentiate them from glass (which is insoluble) may be made at home, as the substance is soluble in warm vinegar. Crystals composed of tartrates are occasionally formed in fruit jellies.

* * *

ANTHRACITE COAL ASHES, carefully sifted, are excellent for rooting cuttings of chrysanthemums, roses, and other plants, in the opinion of a correspondent writing to the journal Science, who points out that her father used no other soil treatment whatever with the ashes and that damping off was unknown in his cutting beds.

(The continuation of this section is on page 29)

Cold Permanent Waves

By ERWIN DI CYAN, PH. D.

MANY WOMEN have come to regard the processes which impart a permanent wave to straight hair as indispensable to good grooming. Such waves, unlike those produced by the aid of various wave-setting fluids, are not lost when the hair is washed. As the hair grows out, however, it will be straight, or assume its natural character, and eventually there will be much of the hair that has not been subjected to the permanent wave, so that it will be necessary to go through the process again to maintain the desired appearance. The wave-setting fluids are solutions of gums in water. These gums, applied to the hair, encase it in a stiff film when the water has evaporated.

Permanent waving fluids used *with heat*, are of various compositions usually consisting of alkalis, which act on the hair in such a way to make it plastic. The hair is then wound on rods which are later heated to set the shape. Since *one side* of the hair is stretched in the process of winding, a wave or curl is produced due to the uneven stress to which the hair is subjected.

Permanent hair wave processes can be divided into three types:

1. Heat supplied by rods of a machine heated by electricity, upon which hair is wound. This method is the machine (heat) method.

2. Heat supplied by packs of chemicals which liberate heat when mixed with water. This method is the machineless (heat) method.

3. Heatless; this method waves hair by making it plastic through the agency of a waving solution at an ordinary temperature. This is the *cold permanent wave process*.

With either of the "heat" methods or the "cold" process, the hair-softening action of the chemical must be stopped after a given period. With the heat treatments, further waving action is stopped by the removal of heat. In the case of the "cold" process, the action of the waving solution is stopped by rinsing the hair.

In the so-called cold permanent waves, a solution consisting of derivatives or compounds of thioglycollic acid is applied to the hair. In this process, heat is not required to form the hair into the shape of a wave or curl. These derivatives or compounds are usually monoethanolamine thioglycollate, ammonium or sodium thioglycollate.

The publicity given some time ago to a death which resulted after a woman had had a cold permanent wave by a *Willat* process, appeared to ascribe the occurrence to the process of cold permanent waving itself. The solution used consisted in part of ammonium hydrogen sulfide, which liberates hydrogen sulfide upon neutralization. The exact mechanism involved is not yet clear, although it is believed that a great absorption of hydrogen sulfide through the scalp was responsible. By the method that was used in that fatal instance, hydrogen sulfide (which is a poisonous gas) was liberated by the chemical interaction in the neutralization of the permanent hair waving fluid.

The absorption of hydrogen sulfide is attended with danger, particularly if cuts or breaks in the scalp are present (even inhalation of a considerable amount of the gas is risky). This form of cold permanent wave is not in use at the present time. The company which manufactured it now offers *Circlette de luxe* Willat Cold Wave which appears to contain in part ammonium thioglycollate, and is in line with the composition of other methods of cold permanent waving.

The conclusion as to whether cold permanent wave processes are safe in themselves cannot be reached without further toxicological investigation. According to an outstanding authority on this subject, Charles Barban, Ch.E., much depends on the composition of the product. Mr. Barban has tested the cold permanent wave solutions by methods which would give evidence of any potential toxicity (parenteral injection into animals), and found that methods using thiogylcollate are apparently safe, even were some absorption into the body to occur. J. J. Eller, M.D., a dermatological authority, concurs, stating that the only tox-

icity he has encountered was manifested occasionally in the hands of the beauty parlor operatives who handle the material all day; this is not at all comparable to the renewal of a cold permanent wave by the consumer, which is customarily about every four months.

It has been noted that beauticians wear rubber gloves when applying the cold permanent wave solutions. The reason is not hard to find. The thioglycollate compounds used in hair waving to soften or plasticize the hair will also soften skin, particularly the hands of the operatives who work with the compounds continually. Their softened hands would be abraded by the friction used in affixing the curlers, and for that reason they wear gloves.

The actual chemistry involved is the application of the solution of the particular thioglycollate derivative employed (called the forming, softening, or waving fluid) and its neutralization after approximately half an hour by an acid, usually citric or phosphoric acids, occasionally acetic, which stops the plasticizing action of the waving fluid; finally there is oxidation with hydrogen peroxide.

In employing this procedure, the beautician applies the waving solution to the hair, sets it up in curlers and covers the head with a cap, to allow the waving fluid to permeate. This permeation period lasts a half hour or longer, depending upon both the make of hair waving fluid used, and the texture of the hair.

Upon removal of the cap, the hair is thoroughly rinsed with water, and the neutralizing solution, consisting of a dilute acid (containing an oxidizing agent) is applied to stop further action of the alkaline waving fluid. Some manufacturers recommend the rinsing out of the neutralizing solution; others do not recommend it. In any event, depending upon the composition, it is possibly a matter of minor importance whether it is washed out or not. There is likely no harm in allowing a mildly acidic solution to remain on the hair.

This general description of the so-called "application type" of cold process permanent waves applies to nearly all of the currently used systems. There is another method of use

referred to as the "injection or circulation type." The only two representatives of that class are the *Circlette* and *Liquacool* methods. In these processes, the wave solution is literally pumped, through curlers or otherwise, through the hair, while it is tightly encased in a rubber cap.

Authorities agree on the presently apparent safety in the application of cold permanent wave processes. In fact, the insurance rates for manufacturers are lower for the use of cold permanent waves than for the hot processes. (This may be due only for the reason that scalp burns are impossible with the cold process, and constitute an important liability with the hot processes.) Only time however will tell of a certainty whether they may be attended with toxicity developing over a considerable period of time.

The apparent differences between the hot permanent waves and the cold permanent waves processes may be summarized:

Hot	*Cold*
Heat needed in its performance.	No heat needed.
Too great or too long application of heat may damage hair, or burn scalp.	No heat used, and no danger of scalp burns.
Often will not wave satisfactorily certain types of hair, nor the hair of individuals in whom a metabolic change is taking place as during pregnancy, disease, or due to the ingestion of certain drugs, etc.	Will wave satisfactorily *nearly* all hair, according to present knowledge.
May do further damage to overbleached hair.	May improve somewhat the texture of overbleached hair.

Relatively few independent beauty salons are yet equipped to give the cold permanent wave, but the beauty departments of many department stores can give "cold" permanent waves on request. There are four patents on various cold wave processes controlled by the Willat group which has granted licenses to use them, to the following companies: The Wella Corp., 104 Fifth Ave., N.Y.C.; Turner Hall Corp., 142 Fifth Ave., N.Y.C.; Gibbs & Co., 21 S. Wabash Ave., Chicago; Heatless Permanent Wave Co., 1122 Folsom St., San Francisco. Brand names include *Wanda* Willat Cold Wave, *Circlette de luxe* Willat Cold Wave, *Eska*, *Noheet* Permanent Wave, and *Wella* Cold Wave. The type used by the majority in New York City was the *Eska* method (manufactured by Turner Hall Corp., 142 Fifth Ave., New York City), which is the "application" type.

Disposable Diapers

IN THESE DAYS of diaper shortages and limited and slow diaper laundry services, disposable diapers and diaper linings are apt to be looked on as the answer to a busy mother's prayer. The sad fact is, however, that there is also a paper shortage and many brands of these time-saving items are not generally available. Some firms indeed have discontinued production for the duration.

The decision to use standard or disposable diapers should be made only after due evaluation of a number of factors. The two chief points to consider are cost and convenience. The standard cloth diapers will involve an outlay of $4 to $7.50 for a sufficient quantity (a minimum of 3 dozen). They must be washed daily with plenty of mild soap—no washing powder or strong soap. It is advisable to rinse them through at least four waters to make certain that no soap remains to irritate tender skin. After that, some expert directions call for boiling the diapers ten to twenty minutes. All this involves considerable time and effort. The use of a commercial diaper service is a time-saver, but the demand for such laundry service is usually far greater than its facilities can provide and furthermore distribution is confined to large cities. Diaper needs of rural and suburban babies must be provided for by other methods.

The use of disposable diapers eliminates the need of diaper washing completely, although other garments will still have to be laundered. One argument in their favor is that since they are used only once and thrown away, there is little likelihood of their causing diaper rash, which is one result of improperly washed cloth diapers, or other skin outbreaks, such as impetigo. On the other hand, disposable diapers are somewhat more expensive than the standard diapers, which will usually last through the diaper period of two children, so that their cost, aside from the labor, soap, and hot water used in washing them, is not great.

The cost of disposable diapers and of diaper laundry service comes to about the same amount, according to the experience of one CR subscriber who reported in 1941 that by using *Kleinert's Refill Pads* the diaper bill for her infant daughter ran to $1 per week, which was the cost of diaper laundry service in her city—not including, of course, the required initial investment in five dozen diapers. The price of both the refills and laundry services has increased since that time, so that the charges will be somewhat more. Of the samples tested, if twelve diapers (a very conservative estimate) are used a day, the cost will range from $1.10 to $2.35 a week. One month's use of disposable diapers will cost about the same as an initial purchase of the needed number of standard cloth diapers. Laundry service for the same number of diapers per day would amount to something like $1.25 a week in a city like Chicago. The disposable diaper solves a difficult problem when traveling or visiting with an infant. Here convenience undoubtedly outweighs all other considerations.

As an intermediate step between the disposable diaper and the standard diaper, there are the diaper linings. These are special paper linings designed to prevent chafing of baby's skin and also to eliminate diaper stain. Since these linings are intended to be worn inside of regular diapers, they do not solve the diaper washing problem, although they do away with the need for hard rubbing.

All of the diapers tested for Consumers' Research required the use of waterproof pad holders or panties. They were inspected for design and construction and subjected to moisture penetration tests to determine the total moisture absorption, and the percentage of moisture taken up was calculated. They were also subjected to a type of test which simulated use, and to a soiling-resistance test. Total absorption, rate of absorption, resistance to water and to soiling were the chief factors taken into consideration in rating the diapers. The basis for rating the linings was ability to stop soiling material, and the wet strength of the paper. All ratings are cr44.

Disposable Diapers

A. Recommended

Baby Anne, No. 1 (Distributed by F. W. Woolworth stores) 50 for 98c. Required the use of a special waterproof panty to furnish stop action. Rapid absorption of liquid, but showed penetration by dye in both use tests. Quantity absorbed, satisfactory. **1**

Roly Poly, Cat. No. 38—3192 (Distributed by Sears, Roebuck & Co., Chicago) 50 for 78c. Virtually indistinguishable from *Baby Anne*, except that samples tested were not so white in color. **1**

Chux (Distributed by Chicopee Sales Corp., 40 Worth St., New York 13, New York) 50 for $1.39. (Montgomery Ward's Cat. No. 31—3196 at same price. Also 25 large size [not tested] at same price.) This diaper absorbed rapidly the greatest amount of water, and prevented dye penetration in both water and soiling tests. Only diaper in group tested that might possibly be used without waterproof panty. Absorbed very rapidly. **2**

B. Intermediate

Kleinert's Refill Pads for Softex Pad Pants (I. B. Kleinert Co., 485 Fifth Ave., New York 17, New York) 48 for 85c. (Montgomery Ward's Cat. No. 31—3176 at 83c; Sears-Roebuck's Cat. No. 38—3177 at 83c.) Required use of special waterproof, pad-holding panty. Paper surface did not absorb rapidly, though ultimate quantity was very good. Dye penetration in water test, poor; performance in soiling test, very good. Paper face strong when wet. Cemented paper binding strips on back came loose a short time after becoming wet. **1**

Texlin (Regal Paper Co., Inc., Pulaski, New York) 40 for $1. Had most elaborate construction of the diapers tested. Required use of some type of auxiliary waterproof panty, as rate of absorption was somewhat slow, and water penetrated through. Paper surfaces of this product both retained strength when wet. Diaper resisted dye penetration in soiling test. Total water absorption somewhat lower than others. **2**

Diaper Linings

A. Recommended

Dennison's Oblong Baby Pads, No. 6 (Dennison Manufacturing Co., Framingham, Mass.) 200 for 89c. (Montgomery Ward & Co., 200 for 98c; 40 for 23c.) Absorbed only very little liquid, but 4 thicknesses will be sufficient to stop diaper staining. Paper strong when wet. With two thicknesses there was a slight penetration of stain.

C. Not Recommended

Fleer Disposable Victory Diaper (Fleer Associates, Merchandise Mart, Chicago) $1 per roll (70 feet). According to information at hand, this material was designed for use in heavy knitted diapers. The total absorption was negligible and the very slow rate of absorption was not satisfactory. When wet, the paper could be "rubbed up." One thickness did not entirely resist dye penetration in soiling test. Two layers performed successfully, but required bulk might not be comfortable. Roll form required previous cutting, or an extra dispenser; a possibly serious disadvantage.

Evaporated Milk

EVAPORATED milk of which 22 samples were tested recently by the Department of Health of the State of New Hampshire is pretty much alike regardless of brand name. The N.H. findings confirm the general impression previously prevailing among workers in this field that the different brands of evaporated milk are substantially equivalent in quality. All of the samples met the usual chemical requirements or specifications applying to evaporated milk, with two minor exceptions.

The relative costs of the various milks tested ranged from an equivalent cost per quart of 12.2 cents to 21.1 cents, the cost being greater for the smaller-sized cans. (One can of evaporated milk can be diluted with an equal volume of water, to produce a liquid approximately equivalent to fluid milk.)

Cans of the larger, or 13-oz., size were priced very close together, and all gave a cost of 12.2 and 12.3 cents per quart, except one (*Brimfull*), which was 13.4 cents.

The smaller, or 5-1/3-oz., cans were not on so strict a basis of competition for their equivalent cost fell in the wide range of 14.8 cents to 18.1 cents with one (*Gate City*) reaching the exceptional level of 21.1 cents per quart.

The five brands, *Borden's*, *Carnation*, *Lion*, *Pet*, and *Rose*, were irradiated, to the equivalence of 135 U.S.P. vitamin D units per quart as diluted for use.

About 17 oz. by weight (15.3 fluid oz.) of evaporated milk (plus water) are required to make the equivalent of a quart of milk of 3.9 fat content (claimed to be the average fat content of milk sold in the United States). Thus a quart of milk in the form of evaporated milk costs about 11¾ cents as against 15c for a quart of fresh milk delivered to the house.

Answers to Questions on Home Gardening

By WARREN B. MACK, Ph.D., THE PENNSYLVANIA STATE COLLEGE

What Is a Good Location for a Garden?

A garden site should be reasonably level, and should be exposed to direct sunlight for at least six hours a day; spots shaded by large buildings or trees should be avoided. The darker topsoil should be eight inches deep or more, and drainage should be such that no water stands on the surface longer than an hour or two, even after heavy rains.

Soils which have produced good vegetable or farm crops previously, or a heavy growth of weeds if idle, should be chosen if possible. Filled-in plots may not be satisfactory, particularly if cinders, rock, or rubbish are included in the fill. If, however, the plot is one that has supported a heavy weed growth, it may be used. Stony land is laborious to dig and cultivate, but may be used if the larger surface stones can be removed.

Is a Soil Test Necessary?

Little information is obtained from a soil test, except as to the need for using lime, unless the test is made and interpreted by an expert. In view of the great number of gardens which may be expected in 1944, it is evident that public agencies will not be able to make soil tests on any considerable proportion of them. The information given by the vigor and composition of plant growth in previous seasons should be sufficiently reliable under present conditions. Good growth of lambs' quarters, pigweeds, summer grasses, or bluegrass is an indication of a fertile garden soil.

Should Lime Be Used?

Most upland soils which are suitable in other respects for gardening probably will not require liming. This is not true of coastal plain and other light, gravelly, or sandy soils, which may require frequent liming. The advice of the County Agent should be sought through the local Victory Garden Committee; he is able to test representative samples of soil for lime requirement, if he suspects that lime may be needed generally in a given locality.

If lime is needed, it is the least expensive fertilizer that can be used, for the gains which may be obtained. The preferred form to use is ground limestone which may be obtained from most dealers in garden supplies; hydrated lime also may be used. Ground limestone may be applied where needed at the rate of four or five pounds to 100 sq. ft. (an area 10 by 10 ft.); three-fourths as much hydrated lime will be sufficient. Spread the lime evenly over the surface before spading, and mix it deeply and thoroughly with the soil.

What Fertilizer Will Give Best Results?

If well rotted stable manure can be obtained in sufficient quantities, it is the best garden fertilizer to use. It should be spread over the surface before digging or plowing, and should be spaded or plowed into the soil, though not all at the bottom of the trench or furrow. Fresh manure may be used only if several weeks can be allowed after spading before seeds or plants are planted.

Most Victory Gardeners will be obliged to rely upon chemical fertilizers to a greater or lesser extent. The Victory Garden Special fertilizer, with analysis or grade of 5-10-5 (5% nitrogen, 10% available phosphoric acid, and 5% water soluble potash) is the only complete fertilizer which is permitted by governmental regulations to be packaged for use on home gardens. (Other grades may be used, but they must be purchased in standard bag sizes.) Apply at the rate of two to three pounds to each 100 sq. ft., in the same manner as described for lime.

Superphosphate may be all that is needed on fertile gardens which have been well manured,

or on which a good growth of weeds, compost, or other organic matter has been spaded in. Apply at the same rate as the Victory Garden Special fertilizer. If chicken manure is used, superphosphate alone, or a mixture of phosphate and potash (0-14-7 analysis) may be added, to make the chicken manure go farther.

Dried manures may be used, though they are often somewhat expensive in comparison with chemical fertilizers containing equivalent amounts of plant nutrients. Follow directions on the bags.

Can Fertilizer Be Applied Near the Seeds or Plants?

A part of the Victory Garden Special fertilizer may be applied near the row in which the seeds or plants are to be planted, for quick effect. Open a drill or trench two or three inches deep, and two inches away from the line where the row of plants is to be located. Distribute the fertilizer along the bottom of this trench, at the rate of a pound to 50 feet of row. Cover the fertilizer, and plant seeds and plants in the row, two inches away from the fertilizer.

Fertilizer may be applied also in water by mixing a teacupful in a 12-quart sprinkling can full of water, and pouring a teacupful of the mixture on the roots of plants as they are being set in the transplanting holes, covering the roots with soil immediately without packing. The mixture may be applied to seeds as they are sown at the rate of a teacupful to each foot of row just before the seeds are covered with soil.

Is Organic Matter Needed and How Is It Supplied?

The effectiveness of fertilizer is increased greatly by the presence of organic matter in the soil. The chief sources available to Victory Gardeners are composts of leaves, straw, grass clippings, or vegetable plant refuse which does not harbor diseases. Manures are the most valuable source, if available. Leaf mold, ground peat moss, and commercial humus are effective, but may be relatively expensive. Crop residues and green manures, or plants such as rye or domestic rye grass, grown for the purpose of plowing or spading into the soil are cheap and very valuable sources of organic matter.

When and How Should Soil Be Prepared for Planting?

Soil should be prepared for planting by spading or plowing deeply (8 to 10 in.), turning under any manures, green manures, lime or fertilizer, and raking or harrowing to firm and level the soil and to break up clods. This should be done as early in the spring as the soil is dry enough, which can be judged by packing a handful, then crumbling it. If the soil packs enough to hold its shape, but crumbles readily without smearing at all, it is in excellent condition to prepare for planting.

What Tools Are Needed?

A garden spade or spading fork to dig the soil, a metal rake to level and pulverize the soil, a garden line to make straight rows, a standard 6-inch hoe to open furrows for sowing seed and to scrape off weeds, and a trowel or dibble to transplant plants are all the tools required for cultural operations in a small garden. For large plots, a wheel hoe is very useful. A hand duster to apply insecticides completes the list of required implements.

How Is a Garden Planned?

Garden plans should be drawn on paper, indicating the location of each kind of vegetable, arranged so that planting can be done row by row at the proper time for each kind. Vegetables should be planted in rows extending through the garden, for convenience in all tillage operations. Widths of rows and spacing of plants, determined by the ultimate size of the plants, should be indicated on the plan, as well as planting dates for each planting.

When Is the Proper Time to Plant Vegetables?

The proper time to plant the different kinds of vegetables depends upon their relative hardiness or tenderness, or susceptibility to damage by frost, and upon their climatic preferences. Relatively hardy vegetables may be planted as soon as the soil can be prepared in spring. Among these are onions, peas, early potatoes, spinach, parsley, turnips, lettuce and cabbage plants, beets, carrots, Swiss chard, mustard, parsnips, and radishes.

Beans, sweet corn, New Zealand spinach, squash, and pumpkin may be seeded slightly before all danger of frost is past, but not so

much earlier that seedlings are above ground before the last frost is likely to occur. This means that, in most localities, these kinds may be planted about a week after the average date of the last killing frost in spring.

Tomato, pepper, sweet potato, and eggplant plants should not be set out until danger of frost is past, or about three weeks after the average date of the last killing frost.

Spring planting dates may vary considerably in certain states, mainly because of differences in elevation and distance from large bodies of water. Similarly, fall planting dates, which vary because of the date of the first killing frost in the fall, must be earlier if frost is early, as at high elevations or in more northerly regions.

How and Where May Vegetable Seeds and Plants Be Obtained?

Vegetable seeds should be purchased preferably from established seed dealers. The seed packets displayed on racks in grocery and hardware stores or gasoline filling stations may vary considerably in quality; some, packed by reputable seed firms, may be fully satisfactory; others may be low in germination and in other qualities, and the price for the quantity obtained may be high. Gardeners may buy cooperatively, by estimating the actual quantity of seed needed, and sending orders together to established seed firms or farmers' cooperatives.

Farmers and experienced gardeners with sufficient space who will have large gardens may be justified in constructing hotbeds and coldframes to produce their own plants. Such gardeners may obtain information on recommended methods from the County Agent.

Plants may be grown in window boxes, but the atmospheric conditions and the temperature in living rooms usually are not satisfactory for vegetable plants. Plants produced by commercial plant growers, and distributed by garden supply stores, florists, or commercial plant farms are more likely to be satisfactory than are those raised at home by inexperienced gardeners without special facilities for producing plants.

Is Watering or Irrigation Practicable?

Light sprinkling, as is done frequently by means of a hose, is at best a waste of water, and may cause a hard crust to form on the surface of the ground. If watering is done, enough should be applied to soak the soil to a depth of eight inches, or to be equivalent to a good rain.

In towns or suburban areas in which water supplies already are drawn upon heavily by war industries, first consideration should be given to maintaining the organic content of the soil, the use of surface mulches, and other methods of conserving moisture in the soil. Where supplies are adequate, or streams and springs can be drawn upon, proper watering produces favorable results, especially on leafy vegetables with shallow root systems, such as celery, spinach, and cabbage, or on root crops.

How Often Is It Necessary to Cultivate or Hoe the Garden?

The chief value of hoeing or cultivation is *to prevent weed growth*, and for this reason it is necessary to cultivate or hoe often enough to keep weeds from making a start, but no more often. Digging the soil in itself does not favor the growth of vegetables, and if done too deeply (more than an inch) may actually cause damage through injury to roots of the growing crop.

The best time to hoe is long enough after a good rain or irrigation to allow the soil to become fit to work, but before weeds have gained a start. Scrape the soil, breaking up the surface crust and destroying germinating weeds, but not disturbing the soil at a greater depth than one or one and one-half inches.

Are Summer Mulches Beneficial?

Summer mulches, in the form of straw, grass clippings, disease-free vegetable plant residues or vegetation that does not carry noxious weed seeds, help to conserve moisture, prevent soil erosion and the escape of rain water, and, if applied thickly enough, stop weed growth. A mulch should not, however, be applied so thick as to exclude air from the soil surface. After they have served their purpose, they may be worked into the soil as organic matter.

How Can Pests Be Controlled?

Pests may be considered as groups, among which are insects, rodents, and diseases. Foremost among control methods are good garden care and neatness about the premises, including the elimination of rubbish, weed and brush

patches, and other places where pests may be harbored. Next may be placed those practices which favor rapid, vigorous growth of vegetables, such as timely planting and cultivation, fertilization, and choice of vigorous varieties.

Rotation of crops, or planting vegetables of different kinds, and, as far as possible, of different plant families, in succession, is another valuable part of pest control.

Certain insects, however, may be troublesome regardless of measures such as those just named. Hand-picking of adult insects, such as potato beetles, bean and asparagus beetles, squash bugs, and the like and crushing of egg masses found on the under side of leaves, are practicable methods in small gardens.

Other insect pests require the application, in sprays or dusts, of the proper insecticides. Instructions on choice of materials and time of application may be obtained from the County Agent or through Victory Garden Committees. A Victory garden insecticide, containing five-tenths of one percent of rotenone, has been authorized for use on home gardens. If applied when insects are just appearing on vegetables, or when larvae are young, this material should be very satisfactory for control of most insects feeding on the surface of the plants, including both chewing and sucking insects.

In small gardens, practical disease control consists mainly in planting of disease-free seeds and plants such as are to be obtained from reliable dealers, in control of weeds and insects, in timely planting and cultivation, and in proper drainage. Most of the varieties and kinds of vegetables recommended for small gardens may be grown successfully without further measures than those already stated.

Rodents present special problems, which must be met by group or community action on the part of gardeners. Rabbits may be trapped with the assistance of game wardens, and transported to other localities where their number is not excessive. This should be done during winter or early spring when trapping is most likely to be successful. Dried blood, obtainable from fertilizer dealers or feed stores, is reported to be an effective repellent when sprinkled on the ground near the plants.

When Is the Right Time to Harvest?

Many vegetables remain in best eating quality during short periods only, particularly such vegetables as are used during the young stages of development of the edible portion, such as peas, sweet corn, snap (string) beans, cucumbers, and asparagus. Such vegetables should be harvested before they have become overmature, because their palatability, cooking quality, and in some cases nutrient values and digestibility are highest during the stage when they are best for eating. If they are harvested when too young, on the other hand, the quantity of food obtained will be less, and some sacrifice of eating quality may be made.

Vegetables which are eaten when mature, such as tomatoes or melons, should be allowed to ripen fully on the vine or plant. Root crops may be harvested during a more or less prolonged period, beginning as soon as they are large enough, and continuing until they begin to become corky or woody. Carrots and beets, for example, may be harvested as needed, from the time when they are large enough and throughout the rest of the season. Carrots increase in carotene content (the precursor of vitamin A that is found in some vegetables and fruits) as they become older, and do not become tough or woody unless they are split or damaged.

How May Surplus Crops Be Cared For?

Surpluses of perishable vegetables may be shared with neighbors who have insufficient supplies, or certain of them may be canned, dried, pickled, frozen, or salted. Root crops, cabbage, squashes, potatoes, and the like, which mature late in the season, may be stored in a damp, cool place.

Should Perennial Vegetables and Small Fruits Be Included in Victory Gardens?

In very small gardens, space usually does not permit the growing of perennial crops, such as asparagus, rhubarb, and berries which require from one to three years before harvesting begins. In larger areas, space along one side of the garden may be devoted to these vegetables and fruits. The farm home garden should contain asparagus, strawberries, raspberries, blackberries, grapes, and other small fruits. Rhubarb presents difficulties in view of present restrictions on sugar. Even on small town lots, a few of these kinds, such as asparagus and currants, may be grown as ornamentals in sunny spots along borders.

Water Softening

By C. A. TYLER, PH. D.

THOSE who live in a section of the country where only hard water is available know what a bane it is and realize how thankful the lucky housewife should be who has soft water supplied for her kitchen and laundry. Natural waters vary in hardness, according to whether they come from wells, lakes, rivers, or reservoirs. "Hardness" means that the water contains mineral matter which has been dissolved from the gravel and rocks over which it has flowed. Completely soft water such as that which our grandmothers used to dip out of the rain-barrel, had not been in contact with the ground and so did not contain such mineral salts; it did contain dissolved gases, including oxygen and carbon dioxide, which it had absorbed from the air as it descended in the form of rain or snow. However, these constituents do not have properties that interfere with washing. Certainly grandmother much preferred to use the water from the rain-barrel on washday rather than water from the nearby creek or well.

The salts present in hard water vary somewhat from one district to another, but for the most part they consist of lime —that is, calcium salts, with lesser amounts of magnesium salts, and sometimes iron or ferrous salts. To have a salt—which to the chemist means a definite classification of compounds—one must have two parts, not just calcium, magnesium, or iron, but one of these elements combined with others to form, in the case of the salts in hard water, bicarbonates, sulfates, and sometimes small amounts of chlorides. The bicarbonate half of a salt is familiar to you in the name of another compound, bicarbonate of soda, in which the bicarbonate is combined with a different element, sodium.

Calcium bicarbonate and ferrous bicarbonate change into other compounds when water containing them is boiled. These salts constitute *temporary hardness* in water, because they can be removed merely by boiling. What happens then is that they give off carbon dioxide into the air in harmless amounts, and form insoluble calcium carbonate and ferrous carbonate respectively. These insoluble salts are the ones which appear as a scale on the inside of a teakettle. Even small amounts of the bicarbonates will form a deposit, over a long enough period of time. The rate at which the scale builds up depends on the amount of temporary hardness in the water used.

Permanently hard water, always a headache in the home, may contain magnesium bicarbonate, which does not behave like the other two bicarbonates when the water is heated, and calcium sulfate and chloride, with perhaps some ferrous salts of the same kind.

The reason that these particular salts in wash water are anathema to the housewife are because they react with the different salts that constitute soap to form *insoluble* salts such as calcium oleate and calcium stearate, which because of their not being soluble in water do not wash away completely in the rinsing. Magnesium and iron salts, if present, behave in the same way. The trouble with these calcium, magnesium, and iron soaps which precipitate, is that they are physically soft, sticky compounds, that tend to cling to the articles being washed and to the sides of the dishpan, washtub, or washing machine. By using lots of soap these curds can be washed away, but they have to be treated like so much dirt that has got onto the dishes or clothes. This process is not only trying to the temper, but is highly wasteful of soap. For example, water containing 10 grains of hardness per gallon uses up as much soap to soften the water as is required to do the cleaning. In other words, half of the soap is lost. One grain of hardness per gallon is a designation of quantity which corresponds to 17.1 parts per million or 0.00171 percent of calcium carbonate. The water used in the city of Chicago contains about 7 grains of hardness or 125 parts per million. Unusually hard water as supplied to residents of Dayton, Ohio, has a total hardness of about 22 grains per gallon or 368 p.p.m.

The agent most commonly used in the past for softening water has been *washing soda*, which is known to chemists as hydrated sodium carbonate. This salt, much less expensive than soap, dissolves in water and reacts with the hard-water salts present to form insoluble

calcium, magnesium, and ferrous carbonates. Use of the soda saves soap, and besides, the carbonate deposits are much more granular and much less sticky than hard-soap deposits, and therefore interfere less with washing, and may be more readily rinsed off.

A water-softening agent which has come into fairly general use during the past several years is the compound, *trisodium phosphate*, a name often abbreviated to TSP. This is sold in some places under its chemical name and in others under brand names such as Oakite and Soilax. Trisodium phosphate is an excellent water softener; it precipitates insoluble tricalcium phosphate, magnesium phosphate, and ferrous phosphate. The precipitate of any or all of these salts is much finer than in the case of the corresponding carbonates precipitated by washing soda, so that the phosphates are less objectionable in the wash water and are easier to rinse away. Anyone who compares the two compounds in use will quickly see the more desirable characteristics of the phosphate softener.

Another good water softener is *sodium metasilicate*, sold in bulk as Metso, which forms insoluble precipitates with the salts in hard water. The silicate does not form large lumps as does the washing soda, nor fine granules as does the trisodium phosphate, but tends to disperse as a cloudiness in the water, very easy to rinse away. This salt is incorporated in many household cleaners.

A property common to all three of these softeners is that in solution they are quite strongly alkaline, even more so than soap solution. Any woman knows that if she keeps her hands in soap solution for a long enough time, the skin will afterward be dry and chapped. The effect is even worse with a solution of sodium carbonate, TSP, or metasilicate. However, when these salts are added to hard water, they disappear by reaction and the new salts formed will not have this effect. But if much more of the softening agent is used than will be precipitated, the solution will be alkaline and will have a drying effect on the hands. For this reason only a little more of the agent than will cause precipitation should be used—in other words, only a slight excess over that required to soften the water.

A product introduced a number of years ago, intended to overcome most of the objections to other water softeners, was *sodium hexametaphosphate* or Calgon. For household use, a water softener called Calgonite is sold. This contains both sodium metasilicate and sodium hexametaphosphate, a name often abbreviated to metaphosphate. This salt operates on quite a different principle from the others; instead of forming an insoluble precipitate with the objectionable calcium and magnesium compounds, it reacts with them to form *soluble* salts which tie up calcium and magnesium in more complex compounds. For example, if we were to add sodium metaphosphate to hard water containing calcium bicarbonate, instead of giving a precipitate of calcium metaphosphate, which would correspond to what has been discussed before, the calcium would combine with the sodium half of the salt to form a new soluble salt, sodium-calcium metaphosphate. Because the calcium is tied to the sodium in this compound, it cannot react with soap to form a calcium soap curd.

Softening water without getting any precipitate naturally offers a tremendous advantage over older methods. No precipitate is present to stick to equipment or articles being washed. Rinsing is quickly effective, just the same as with soap in soft water. Another point in favor of metaphosphate is that it is not alkaline in solution and so will not dry the skin as alkaline salts do.

Still another member of the phosphate family, sodium pyrophosphate, is being much used as a water softener. This is not marketed for household use in pure form, but is present in blends of soap products such as Supersuds, Rinso, Chipso, and Oxydol. Besides soap and 15 to 30 percent of pyrophosphate, these products contain a little sodium carbonate, metasilicate, and TSP—at least they did in the pre-war period. Sodium pyrophosphate works by forming a very fine precipitate with calcium and magnesium salts, but with a large excess, these insoluble salts disappear to form soluble complexes comparable to those formed with metaphosphate. However, the presence of soap tends to prevent formation of the complexes, especially in the case of calcium. In practice the effect is to remove hard-water salts by their conversion to an easily rinsable precipitate. The reason that pyrophosphate can compete successfully with metaphosphate is that it is a good deal less expensive. An advantage that it possesses over the older softeners is that it does not give a strongly alkaline solution and so is not caus-

tic when used in excess, as are washing soda, TSP, and metasilicate. This is a property strongly favored by many housewives.

All of these softening agents are preferably added and dissolved in the water *before the soap is added*. Otherwise the soap and the softening agent are competing at the same time for the calcium and magnesium present, and the soap would be sure to win at least a part. In more scientific terms, calcium and magnesium soaps are sufficiently insoluble so that these soaps would precipitate to some extent even in the presence of more insoluble precipitates. Therefore in order to save soap and to avoid the formation of gummy, adherent hard-water soap curds, the *water should be softened first and soap added afterwards*.

There is now available a short-cut method of getting away entirely from the nuisance of hard-water soap curd. That is to use some of the new *synthetic "soapless detergents."* Because these are not soaps, they cannot react with calcium and magnesium the way the second half of a soap molecule does. Some of these products are efficient washing agents and can therefore be used in hard water (or even salt water) to replace soap entirely. All of them cost a good deal more than soap does, but that has to be balanced against the amount of soap that might be wasted, or the inconvenience and minor expense of softening the water first.

Dreft, which is not available at present is one of the best known of these soapless detergents. It consists of sodium lauryl sulfate and some sodium sulfate, and is an example of a good washing agent that can replace soap satisfactorily in hard-water districts. The soluble calcium and magnesium salts originally present remain soluble for the most part, although some calcium salt may be precipitated, as it is much less soluble than the corresponding magnesium salt. A reasonable excess of the detergent tends to keep the calcium salt in solution.

Perhaps an explanation should be made as to what constitutes a proper amount of a washing agent. By washing agent I mean soap in soft water, or a synthetic detergent in hard water—I see no reason to use the latter in soft water. The housewife has a practical criterion of how much soap is needed. When enough detergent is present to give a good suds, she knows that washing should be efficient. Use of more of the detergent will be of no particular value. This qualitative procedure corresponds to what the chemist does in a quantitative way when he determines the amount of hardness in water. By observing the cost of the minimum amount of a synthetic detergent required to produce a satisfactory suds, as compared with cost of soap used under the same conditions, the housewife can determine for herself the economy of the synthetic.

Other synthetic detergents of significance for use with hard water are more complex in composition than any of the products mentioned. They may be described as alkyl aryl sulfonates, and are represented by the products used in numerous commercial washing processes, Nacconol and Santomerse. This type of detergent has been in great demand by the Navy and is not available in any large amount at the present time for civilian use. Such synthetic detergents will doubtless come into their own on the Home Front after the war. Incidentally, they were developed to compete with coconut-oil soap, which had been used for years as hard-water and salt-water soap. However, after the Japs got control of certain islands in the Pacific where the coconut palm grows, no more coconut oil was available in this country; our chemically produced substitutes then came into official favor.

While we have described water softeners as single compounds, many of the products

Editor's Note—A preliminary report from the Montana State College Agricultural Experiment Station has indicated that in Montana's hard water some of the soap substitutes (sulphated or sulphonated fatty alcohols) although they produce excellent suds, have not performed as well as soap in removing soil from garments made of cotton, linen, silk, rayon, and wool fabrics soiled by actual wear. *The conclusion expressed by Miss Jessie Richardson of the Department of Home Economics is that in cleansing power, "these new soap substitutes in their present form are not satisfactory, and are not a substitute for soap for general home laundering even with 'hard' water." Information is not now available on the* amount *of the deficiency in performance of the synthetic products as compared with soap.*

CR is not as yet in a position to make a positive statement on this matter; some would hold that the differences between garments soiled by actual wear and pieces of cloth soiled under laboratory conditions are not sufficient to account for the inferiority in the action of synthetic soap substitutes reported by the Montana laboratory. On these questions, however, new data permitting a conclusive judgment should be available in the near future.

sold are mixtures. From the discussion it is apparent that many combinations of two or more materials are possible, giving products having their own advantages. For example an excellent dispersing agent such as sodium pyrophosphate is frequently mixed with a less expensive precipitating agent, resulting in a low-cost compound which softens hard water by forming an easily removed precipitate, that is, one which remains in suspension to a greater degree than it would in the absence of pyrophosphate.

It is evident that the housewife no longer has to rely on soap to do its own water softening. She can now make a choice of suitable softening agents, depending on what she is looking for as to results and convenience. Some households have installed Zeolite softeners, equipment which is built into the piping system itself and in which the chemical used is renewed or reactivated merely by treatment with table salt. Such an installation saves the trouble of softening each pan or tub of water as used. Another but hardly practicable answer to the problem is to live in a soft-water district, such as Maine, Vermont, or Washington State.

Protection of Food Against Insects

FLOUR, rolled oats, cornmeal, whole grain cereals, natural brown rice, dried beans, peas, lentils and other similar foodstuffs quite frequently become infested with insects during storage, and if heavily infested are rendered unfit for human consumption and should be disposed of promptly. Their containers should then be treated with heat or boiling water. The most troublesome insects are the grain beetles, rice and granary weevils, and meal, flour and grain moths. They may be brought into the home with food purchased at the grocery store. When only lightly infested, some types of foodstuffs can be saved by placing in an oven for an hour or so at a temperature of 130° to 140°F., which kills the insects' eggs and larvae. After such treatment, flour, for example, can be sifted to remove the dead insects. With breakfast cereals and similar foodstuffs it is not practicable to remove the insects after such treatment and make the food fit to eat.

Grain in quantities large enough to justify the treatment can be treated with a mixture of carbon bisulphide and carbon tetrachloride without damage to its quality as food or to its germination properties as seed. Three or four ounces of the mixture should be placed in a shallow dish over about five bushels of the infested grain, within a tightly-closed container, for a period of 48 hours. Carbon bisulphide alone is effective, but because of its fire and explosion hazard, its use alone is not advisable. Even the mixture should be treated with caution and if it is necessary to use a light while the fumigation is in process, use a flashlight, and of course avoid smoking. (Avoid any breathing of carbon bisulphide and carbon tetrachloride vapors.) For storing beans to protect them from weevils, the New York State College of Home Economics at Cornell University, Ithaca, New York, suggests use of a can with a close-fitting cover, with a small bottle of chloroform having a wad of cotton in place of a cork, placed upright on top of the beans. The wad of cotton can be quite tightly packed so that evaporation will take place slowly. Be careful not to breathe the chloroform vapor.

The best measures are preventive, and if the following steps are taken, housewives can avoid, or at least reduce, losses due to insect infestation:

1. In buying foods of the types that become infested easily, buy in lots small enough so that the amount purchased can be consumed in a reasonably short time.

2. Subject all purchases of such foodstuffs to a careful inspection to insure their freedom from insect infestation initially.

3. Store in tightly-sealed containers, the glass type with rubber sealing rings being the preferred type.

The Not-So-Magical "Magic Electric Welder" for the Home

WITH MANY people acquiring new manual skills in our war plants, there is likely to be a large increase in home craftsmanship, particularly after the war, when good hand tools, power tools, and motors again become readily available. Some manufacturers, of course, are not waiting until after the war, but are seeking to "cash in" on the sale of merchandise that can be made with the limited supplies of materials permitted for manufacture of articles made of metal.

One firm has been heavily advertising a contrivance called the *Magic Electric Welder*, and this and various imitations of it are being extensively advertised in popular magazines, particularly in home-crafts and hobbyists' journals, and in newspapers. The devices are also being merchandised by reputable stores which cater to the home-craftsman and handyman. Apparently identical equipment supported by almost identical advertising is sold as from two different manufacturers: one, Magic Electro-Welder Mfg. Co., and the other the Welder Products Co., both of New York City. Special appeal to the householder in these times is in the claim the promoters of the article make for farm and home repairs. Other advertising claims are that the *Magic Electric Welder* "Welds, Brazes, Solders, Cuts all metals," "Anyone can operate it," and that "Complete safety is assured." Prospective customers are exhorted to get in on the welding boom with "This fine set which quickly teaches you welding."

This sounds very fine to one who has done no electro-welding, but the consumer who buys this welder with the idea that he will be able successfully to do any and all of the things mentioned, is likely to find himself very much dissatisfied with his purchase, and out of pocket to the tune of about $20. One of our subscribers who found himself in just this position shipped the "welder" he had bought to CR with the request that after examining it we dispose of it as we wished at his expense, with the indication that he didn't need the article back because it was worthless so far as he was concerned. Previously he had written a letter of complaint to the manufacturers and returned the welder to them; the company not only did not answer his letter but refused to accept the appliance.

Certain advertisements for one of these appliances claim that it is used by some large companies and by the U. S. Navy. The average consumer's reaction would be that if this welding outfit is good enough for such firms it must be a very good and useful appliance. An inquiry by CR, however, revealed that one of the companies had no record of purchasing this welder over the past two years, and had besides received no request from the manufacturer for permission to use its name in advertising. Another firm stated flatly that it was not used by them as standard equipment, and a third had purchased one of these welders 10 years ago but found it unsatisfactory for the purpose for which it had been purchased. Thus while this advertising of "prominent users" may not be entirely false, it certainly is deceptive and misleading in its effect on the reader who would suppose that if several big corporations had bought the appliance, they did so in full knowledge of its good performance and value in use.

The welder is supposed to be applicable to either of two welding methods, the *flame* and the *metallic arc*. It was found practically impossible, or at the most, extremely difficult to weld with this outfit, using the metallic arc method, for despite the use of such care and skill as the amateur welder would

be able to employ, the tip of the welding rod sticks to the work, and causes a short circuit which promptly blows a 30-ampere fuse. (New fuses are 6 cents each, and not too easy to buy at this time.) The manufacturer is quite right in one point, in the advice he gives in his circular of "Directions" where he says, "connect as near meter as possible to avoid overheating long wires in walls"!

The easiest type of work that should be accomplished by such a welding device would be brazing, and this, using the flame method, was also found impracticable in amateur hands. The principal difficulty was that the brazing metal did not flow smoothly and readily as it would with proper use of a gas-compressed-air torch or blast lamp, and failed to adhere because of rapid and serious fouling of the work and the brazing solder by the fumes and deposit from the arc. The same operator had no difficulty in doing a good small brazing job with an ordinary blowtorch or a self-blowing alcohol torch of a kind which many consumers have. (The manufacturer's circular of "Directions" makes the interesting suggestion that if you are unable to braze with the use of the contrivance, you may apply heat from a blowtorch, too.)

Without question, the large amount of current taken by the welder is the principal and a very serious objection to it. The claim repeatedly appears in advertising that you can plug the appliance into any outlet. This claim is, of course, absurd and misleading in view of maker's advice already noted to "connect it as near meter as possible to avoid overloading long wires in walls," and also in view of the fact that the device consumes from 36 to 45 amperes at 120 volts, or approximately twice the current which is safe to carry in a standard house-wiring circuit, and from 3½ to nearly 4½ kilowatts, a power drain which would call for very special wiring, circuit breakers, and other equipment more characteristic of the manufacturing plant or engineering laboratory than of the home. The only possible way in which such a contrivance could be used would be if it were taken off the 110-volt leads feeding an electric range (and it would be very important not to get the 220-volt connection instead), or directly off the mains—in which case, fuse protection would be lost. (The absence of such safety precautions would be a highly hazardous arrangement at best, and would invalidate one's insurance protection, besides, and very properly so.)

On the ground of extreme shock hazard, too, this type of home welder must be classed as a definitely dangerous piece of equipment, for if the brass rods which hold the carbons are accidentally touched, a shock at full-line voltage can be received—contrary to the advertising, which claims *complete safety* for the device. As to this point, the manufacturer of one welder wisely advises: "Avoid touching both brass rods . . .," and "Do not stand on wet floor when using welder," but the prospective user is not made aware of these very significant precautions until he has spent his $19.95 and has received his new "welder" from the post office or the express company.

Cost of Sweeteners

THE SUGAR RATION is too small for people who have occasion to do a considerable amount of baking, and a number of sugar substitutes are, therefore, in use. A Bulletin of the Montana State College Agricultural Experiment Station gives an interesting table of the relative cost of various sweeteners. When sugar substitutes are used, it is recommended that a small amount of baking soda be added to the recipe as follows: ⅛ teaspoon for each ¾ cup of honey (which replaces 1 cup of sugar and ¼ cup of liquid); ¾ teaspoon with each ½ cup of sorghum or molasses (which with ½ cup of sugar replaces 1 cup sugar and 3 tablespoons of liquid). With ⅜ cup of corn sirup (which with ½ cup sugar replaces 1 cup sugar and ⅛ cup liquid) no soda is required.

The addition of soda is to neutralize the acid which is present in the sugar substitutes other than corn sirup; if this acid is not neutralized, the cake or cookies made with the sugar substitute is likely to be soggy.

A substitute sweetener cannot be used for all the sugar in a cake recipe, but only for half. (Honey, however, can serve as a complete substitute for sugar.)

	Approx. net cost per lb.	Cups per lb.	Cost per cup
Sugar	9c	2-1/4	4.0 cents
Honey	15c	1-1/3	10.8 cents
Corn Sirup	8c	1-1/3	5.8 cents
Molasses	16c	1-1/3	11.6 cents

Questions and Answers

Editor's Note: CR receives many requests for information from individual subscribers on subjects not covered in the BULLETINS or on subjects which have been discussed but upon which the subscriber wishes a special application made to his particular problem. To answer some of these questions is time-consuming and costly, and diverts attention that would no doubt be better applied to work of benefit to all of our subscribers. Often the cost of giving a satisfactory and sufficiently comprehensive answer to a single letter will far exceed the amount the subscriber has paid for his yearly subscription. This, of course, in many cases involves a use of CR's funds which is hardly to be justified on any economic basis, but we have handled such requests for special help to the extent practicable at a given time out of courtesy and a desire to help subscribers as much as possible. Since in answering certain of these questions, information is sometimes developed that will be of considerable interest to a number of subscribers, we plan to publish selected questions and answers at intervals in our BULLETIN.

Subscriber's Question: "Have read what your Bulletin has to say as to *Bond Anti-freeze*. News story tells us its manufacture has been outlawed. We used Bond all last winter, so you know what happened to the car. Now, can the company be held for damages? Perhaps the company will gladly pay damages. What is the company's name and address? If company can be prosecuted, is there precedent—What is the procedure?"

Answer: Theoretically the company might be held for damages, but practically it is doubtful whether the amount received would pay for the legal action necessary, and there is no certainty that the legal action could be won, for court decisions in the field are conflicting and complicated. I think it is fairly safe to say that the company will *not* gladly pay damages. It would be a novel situation if companies dealing in such products showed such a co-operative attitude. If you find they do, be sure to let us know, because we would want to give notice to such an unusual occurrence. ¶You can get information about the company's claims and their product by writing to the Federal Trade Commission, Washington, D. C.

* * *

Subscriber's Question: "Can you give me your opinion of the value of an automatic cut-off and automatic feeder which my heating man recommends? Are they worth the expense? Is the McDonnell-Miller type, which he favors, a good one? And, is there any danger of flooding from this feeder if, for any reason, it should, at any time, fail to operate?"

Answer: Whether or not the installation of an automatic cut-off and automatic feeder would be worth the expense would depend on the character of your heating system and the care it receives in operation. Automatic devices are never, of course, 100 percent dependable. The automatic cut-off, for example, functions in the event the automatic feeder should fail to operate and would thereby permit the water to get down to a dangerous level. Domestic heating systems in good condition use so little water during the course of a heating season that an automatic feeder is, in our opinion, not desirable, for it is a simple matter to keep the water up to the correct level by manually operating the boiler-water supply valve when needed (a few times a year). *A low water cut-off device to shut off the burner* until water is added might be advisable if it is considered that there is a danger of the operator's neglecting to check the water level at stated intervals.

* * *

Subscriber's Question: "From several sources I have had recommended to me the installation of a so-called draft regulator in the smoke pipe of my oil burner. Another term for this apparatus is draft governor. ¶Will you please advise me if you have any knowledge of the actual results obtained with these regulators or any test data which would confirm or deny the claims for substantial fuel oil savings by their use. If you agree that they are useful, could you give me the name and approximate price of one or two that you could recommend."

Answer: The installation of an automatic draft regulator can

result in a 10% to 15% reduction in fuel consumption, which, while much less than some manufacturers claim, is well worth while. ¶The Hotstream Motorized Draft Control, made by the Hotstream Heater Co., Cleveland, Ohio, and Type M Motorized draft control, made by H. D. Conkey Co., Mendota, Illinois, are both rated as satisfactory. The prices for the Hotstream Draft-O-Stat range from $2.84 for Model 6B (for 8-inch, 9-inch, and 10-inch flues). This company also offers a motorized Draft-O-Stat which sells at $14.84 to $15.60. (These prices were those in effect Nov. 1942.) For the Type M Motorized draft control, prices range from $14.50 for the 9-inch size to $32.75 for the 15-inch size, f.o.b. factory. This company also offers a Type M Barometric at $1.95 for the 6-inch size to $9.50 for the 15-inch size, f.o.b. (Prices as of Jan. 1943.)

* * *

Subscriber's Question: "Many people profess that one of the most dependable home remedies for acute indigestion or for a low resistance to colds is the taking of a half teaspoon of baking soda (bicarbonate) in warm water each morning immediately after arising. ¶While I have been a subscriber to Consumers' Research this item has failed to come to my attention and I wondered whether or not you could give me some laboratory advice on this problem."

Answer: The taking of baking soda is undesirable, either for indigestion or for other reasons, unless for some temporary requirement specified by a physician. ¶There are a number of possibilities connected with the excessive or regular use of soda. One is that the natural alkaline balance of the body, which the body's organs must maintain with high precision may be upset. Loss of this balance may result in many distressing symptoms, for it interferes with the oxygen-transferring characteristics of the blood, and all degrees of failure of the blood to carry sufficient oxygen tend to produce some degree of tissue breakdown and, depending upon a person's health and physical condition, may cause very serious results. The fact that soda is essentially a poisonous material is evidenced by the observation that large doses can cause interference with digestion, even nausea and vomiting, headache, dizziness, pains in the calves of the legs and muscles of the arms, numbness in the extremities, feeling of restlessness, trembling or even mental confusion. The taking of alkalis can even produce changes of disposition and mentality, with the development of irritability. Sometimes even what is called a nervous breakdown is actually the effect of a long period of taking alkalis. ¶If this were not enough against the taking of soda as a routine practice to deal with digestive trouble, it may be mentioned that the soda may prevent absorption of vitamins and aggravate abdominal distension and similar complaints, because its use results in the production of carbon dioxide gas in the stomach and intestines. ¶This may seem a somewhat alarming picture of what to most people is a minor or occasional difficulty, but it is important to many people who think that they may eat anything and then solve the problem by a dose of baking soda or one of the numerous proprietary tablets, mineral salts and waters, or fizzing drinks sold as suitable for "alkalizing" the system.

* * *

Subscriber's Question: "Can you recommend any manufactured items or effective materials for home fabrication to prevent the staining of hat crowns where they come in contact with the hair and at the sides of the head in the vicinity of the hat band when oily hair preparations are used?"

Answer: The only sure way of preventing such staining is to change to a non-oily hair preparation. However, a piece of cellophane cut and formed to fit the inside of the hat should be satisfactory in preventing staining of the crown. A number of manufacturers have developed various devices to attach to the sweatband to retard or stop the staining from hair oil and perspiration in the vicinity of the hat band. Most of these devices involve stitching a piece of fabric or oiled silk to the sweatband, which in turn is stitched to the felt. Unfortunately, the thread acts like a wick and the oil is transmitted eventually along the thread to the felt. You might try inserting a strip of cellophane between the leather sweatband and the felt, as this method is said to have been effective in some cases.

* * *

Subscriber's Question: "I own a 1942 Super Buick and have recently been advised by the local Buick agency that it is extremely important that the oil filter be removed from my car regardless of the mileage or length of use. The reason given is that changed driving condi-

tions, lower test gasolines, etc., prevent proper engine crankcase ventilation. These conditions are said to cause oil filters to disintegrate, which can cause stoppage of the oil flow to vital parts, resulting in serious damage to the engine. What is the opinion of Consumers' Research on the retention or renewal of the oil filter? I cannot quite see why it should be removed at this time if there was any reason for putting it there in the first place."

Answer: The advice given is sound, for if the filtering unit in an oil filter is not changed frequently, the acid collecting in it will affect the filter material and in time its fabric will disintegrate and the particles be pumped into the oil system, resulting in stoppage of the oil supply, an occurrence capable of causing major and complete engine failure. Today's low operating speeds and more frequent starts result in the occurrence of this condition at much lower car mileages than formerly. Hence, as experience has indicated it is practically impossible to get owners to change the filtering elements more often than 5000 miles regardless of the nature of use of their car, it is probably the best policy to remove the filter altogether, under present driving conditions.

Biolac — a "Modified Milk"

THE PRICES paid for milk by the dairy companies to farmers in New York State are set by such a complex system in the federal control of milk that it is often difficult for farm people to know just what income they are receiving from fluid milk and what they are entitled to. Rates of pay are set on the "end use" of the milk, whether for delivery to the consumer as fresh fluid milk, or for cheese, ice cream, evaporated milk, etc., and the price varies accordingly.

Now it appears from an article by Editor William F. Berghold in a recent issue of The Rural New-Yorker that a "modified milk" bearing the distinctive name *Biolac*, put out by the Borden Company, is a milk product similar to but not identical with evaporated milk. Consumers have been paying 23 to 25 cents a pint (16 fl. oz.) for *Biolac*, as compared with 10 cents for the same amount of evaporated milk. The price paid to the farmer for five years prior to October 1, 1943, was understood to be at the rate for milk used in the manufacture of evaporated milk or some 50 to 90 cents less a hundredweight than for that which went into "fluid milk" for delivery to ultimate consumers with no processing other than pasteurizing. Although the company making this grossly overpriced product paid the farmer at the lower rate, the consumer paid, as has been noted, more than twice as much for a pint can of *Biolac* as for an equivalent amount of evaporated milk.

Biolac contains added vitamins A, B, D, and G, and mineral supplements, but many evaporated milks are also irradiated to introduce "sunlight vitamin" D; it is doubtful if consumers would be wise to pay any higher price at all for *Biolac* on account of the vitamin and mineral supplements found in it. *Biolac* is rather to be considered another one of those "distinctive name" transformations of a familiar and common product so that unwary consumers will think it peculiar or meritorious in some way that warrants their paying a fancy price for it.

Beginning October 1, 1943, farmers have received better treatment, for they have been paid Group 1 fluid milk prices for the milk used in the manufacture of *Biolac*. While this, of course, increases the cost to the Borden Company somewhat, it does not make the product any more economical or desirable from the consumer's standpoint than it was before the change.

To avoid waste in buying "dressed-up" milk products at abnormally high prices, readers will find it worth while to note the actual relationship between the average compositions of the usual types of milk and milk products. The accompanying table gives the essential information.

Product	*Fat*	*Milk Solids Not Fat*	*Sugar*	*Water*
Fluid Milk	3 to 5%	8.5 to 9%	0	86 to 88%
Fluid Skim Milk	0.1%	8.5 to 9%	0	91 to 91.5%
Condensed Milk (Sweetened)	8.1%	20.1%	44%	27.8%
Evaporated Milk	7.9%	18%	0	74%
Dry Whole Milk	27.5%	70.5%	0	2%
Butter	80.5%	1.0%	0	15.5%

SHOE POLISHES

Kiwi, Meltonian, Esquire, Whittemore's Bon Ton

SINCE the article "Shine 'Em Up" was issued in the September 1943 BULLETIN, CR has received several letters from subscribers suggesting that we investigate and report on the newer tan, brown, or oxblood stain-type polishes now widely sold. A shoe polish that would give a good, durable shine without too much effort would be a boon to many civilians who, due to the manpower shortage, are finding it difficult to get shines at a shoe-shine parlor. As one subscriber puts it, "On observing the beautiful shine on low shoes of a soldier friend, I made inquiry. He said one needed better polish than the 10-cent type ordinarily used. Other soldiers told me that they did not know about superior polishes until they entered the Army."

THE "SUPERIOR" POLISHES referred to, when purchased were found to be all of the stain type. They were *Kiwi*, *Meltonian*, *Esquire*, and *Whittemore's Bon Ton Army Stain*. These stain polishes all sold for 25c in amounts varying from 1⅜ oz. to 2 oz. (they were packed in boxes containing ounces and odd fractions, or a quantity expressed in grams or fluid ounces, making computation of the actual comparative cost per ounce far too much trouble for the average shopper. The polishes cost about 3 times as much at retail as the ordinary polishes (10c for 2¾ oz.). *Esquire* and *Kiwi* cost 40 to 50% more per ounce than the *Meltonian*, which had the lowest cost per ounce of the four stain polishes.

THE FOUR BRANDS were tested on two pairs of shoes worn on alternate days. A stain polish was used on the right shoe, and a typical polish of the more usual and cheaper type (*Griffin*) was used on the left shoe as a "control."

THERE WAS LITTLE if any difference in the initial brilliance of the shine produced by the stain polish and the ordinary brown or tan polish, but the stain polishes studied seemed to produce a harder finish and the shine lasted somewhat longer without getting dull. The shoes polished with the stain polishes could also be brushed up to a shine more times without adding additional polish than could the ordinary polish. The stain polishes tend to dry out more quickly than the ordinary polishes. This characteristic, unless the higher-priced polish is used up rather quickly, would make it even more expensive than it would otherwise be, compared with an ordinary 10c brand.

STAIN POLISHES for tan, brown, or oxblood shoes are useful in covering up scuff marks on shoes, but as to the shine itself, it is doubtful whether for the average consumer the extra quality of shine would be sufficient to be worth the extra cost, since the difference between the several polishes was small enough that it could be detected only under carefully controlled conditions and would not be at all apparent in ordinary use. There is no substitute for elbow grease in shining shoes, and it may be that the superior results in shoe shining obtained by soldiers not on active duty are due in considerable part to the fact that they spend more time, care, and muscular energy in shining their shoes than civilians do.

★

»***Care of rugs*** is helpfully discussed in a little pamphlet available on application to the Alexander Smith & Sons Carpet Company, Yonkers, N. Y. It contains many pointers, which few except rug experts would know about, on how to use and care for rugs, including good advice on how not to clean a rug at home. There is a good discussion of "first aid" required when something is spilled on a rug, and how to prevent attacks of moths and silverfish.

New Soap Substitute— for Home Laundering and Dishwashing

SUBSCRIBERS have recently inquired about a new product called *Sudz*, said to be sold only by Sears, Roebuck & Co. While the product under the particular name of *Sudz* may be sold only by Sears, Roebuck & Co., it is certain that products of similar character are available from other sources and under different names. One of the variety chain stores has recently displayed a product which many housewives will take to be a product of similar character, under the name *Coldfoam* at 25c for a pound box.

Sudz is a kind of soap substitute, allegedly safe for the finest, most fragile fabrics, and usable "wherever you would use fine soap flakes." Among the claims made for *Sudz* are: It gives suds immediately in hard or soft water (sudsing in hard water is a great advantage for any detergent material in the home). It is used in smaller quantities than powdered or flake soaps and requires, according to directions, only a level teaspoonful to a gallon of water. A 12-oz. package asserted to contain enough for 96 dishwashings, sells for 47c; 28 oz., 95c.

Analysis showed the product to be a synthetic organic detergent in the general class similar to Procter and Gamble's *Dreft*, containing as is usual with such products, considerable sodium sulfate, and in this case salt, which is also sometimes present in such products.

An attempt was made to make a rough determination of detergent qualities of *Sudz* as compared with soap to see whether the claim of greater cleaning power per unit quantity was justified. Approximately, it was found that 1 teaspoon of *Sudz* is equal in detergent effect to 4 to 6 teaspoons of powdered *Ivory* soap. On a weight basis, the proportions would be: 1 ounce of *Sudz* would be equal to about 2 to 3 ounces of powdered *Ivory* soap. On a cost basis using relatively soft water, the use of *Sudz* would not be economical as compared with *Ivory* soap, but with water which is quite hard, this would not be true, and there is a factor, other than the relative cost, which must be considered. That factor is that with the *Sudz*-type of detergent, the deposit of lime salts is prevented. (These are the salts which form a slimy ring in the wash bowl at the water line and which catch dirt and often leave noticeable unpleasant residues on fabrics, and on dishes, glassware, and utensils.) A similar result can be achieved, though less directly and conveniently, by first softening hard water with a chemical softening agent such as tetrasodium pyrophosphate, or a mixture of trisodium phosphate, 3 to 4 parts with 1 part of tetrasodium pyrophosphate.

After the test of *Sudz* was completed, a brief study was made of Savogran *Coldfoam*, a product of The Savogran Co. of Boston. This was sold in a blue one-pound package the labeling of which strongly suggested that the product was one of the same general type as *Sudz*, viz.: a product having characteristics similar to soap but of a different chemical character. The white powder constituting *Coldfoam* was found on test to be chiefly *sodium carbonate* (washing soda) and to contain only a small amount of synthetic organic detergent, and sulfate, a chemical substance which is usually present with a synthetic organic detergent. (Packages, it happens, were found slack filled to the extent of 25% or more.)

Coldfoam is not actually a competitor of a product like *Sudz*, although the average housewife, who does not know that "soap powder" is not powdered soap, would think so. Neither is *Coldfoam* a satisfactory or general substitute for soap, although many a homemaker would suppose it was, from its labeling. In the trade, *soap powder* does *not* mean powdered soap, and the distinction between the two materials is very important to keep in mind. Soap powders are normally about 30 to 40% washing soda or soda ash with soap. "Soapless" soap powder, such as *Coldfoam*, is washing soda plus a soap substitute. (Some are no doubt aware that soap powder has a rather stronger action than soap. Few, perhaps, know that many flaked and powdered soaps, so called, are not soap alone, but contain some water-softening or detergent chemical like washing soda or trisodium phosphate.)

Soap powders are, of course, hard on the skin, and would be very hard on clothing, although they might have their uses for general household cleaning and scrubbing (but not finished floors, or linoleum, of course) and for laundering badly begrimed coarse garments. For many people, any type of soap powder containing a considerable proportion of sodium carbonate or trisodium phosphate would not be suitable for dishwashing unless rubber gloves were worn. *Coldfoam's* label indirectly and unwisely recommends use of the product in laundering as well, as a picture prominent on the label shows a person at work with a washtub.

A washing test was given to *Coldfoam* and in this, so far as cleaning properties were concerned, the product performed in a way somewhat inferior to *Sudz*. The consumer will be justified in regarding *Coldfoam* as a rather expensive way to buy a mixture of washing soda and powdered soap or washing soda and synthetic detergent like *Sudz*, and it must be understood that a soda-synthetic organic detergent mixture cannot be used as pure soap or soap substitute could be for general laundering of fabrics, etc.

Sudz, in the washing tests, foamed more readily and gave more than twice the suds volume that *Coldfoam* did. The stability of the foam or suds with *Sudz* was greater than with *Coldfoam*.

Consumers will do well to remember that in so far as they have a choice of soaps in the stores, it is more economical to buy washing soda and pure soap powder or flakes separately and mix them as needed, rather than to buy a brand of soap which already contains washing soda or other "builder," for the manufacturers of mixed powders actually charge a great deal more per pound for soap plus a very low-priced chemical worth about 1c to 3c a pound at wholesale (very much cheaper than soap) than would be charged for pure laundry soap. Thus in a test some years ago, one exceptionally low-priced soap was priced as low as 16c per pound of dry soap content (others at 19c and 22c), whereas well-known brands of chip and bead soaps containing the cheap builders were priced as high as 20c to 27c per pound of soap content. In ordinary times, perhaps, saving by purchasing soap separately from chemical detergents might not be considered important, but now that soaps and soap powders of all sorts are difficult to obtain, the possibility of achieving considerable economy in this way is well worth keeping in mind.

Unfortunately there is another and little understood factor besides the prevention of the deposit of lime salts which enters into the use of soapless detergents. There is reason to believe, according to studies of the University of Montana not yet available in detailed form, that in spite of their excellent sudsing properties, the soapless detergents do not perform as well in removing soil from garments as they do in the laboratory in removing "dirt" or stains of an artificial sort. Some information on the extent of this difference between the newfangled cleansers and old-fashioned soap should be available in the near future.

Off the Editor's Chest

(*Continued from page 2*)

less hours of time and trouble, far more costly to the total national effort than the value of the tubes that might be provided, are spent by consumers and merchants in trying to obtain a few tubes from non-existent supplies. It is estimated that over a three-months' period one family in ten had tried to purchase a needed tube with only 40 percent successful in finding the one required. Those responsible for the allocation of production and the setting up of restrictions seem to lack all realization of the extent to which they are throwing wrenches into essential civilian activities. They are prone to assume that merely issuing an order provides tubes or other parts. Actually, they often release a restriction formally while failing to effectuate practical means that permit manufacture of the materials or articles and consequently several months or an even longer time may elapse between the go-ahead order and the actual production in many cases. In the long interval, some other breakdown occurs, such as wearing out of some other part, or the servicemen in that particular field or area who might have made the installation are drafted, and the consumer is still left to get along as best he can without the use of some important appliance.

The clamor for repair parts was stilled somewhat on the announcement by the Office of Civilian Requirements last November that a limited number of needed appliances such as electric irons, washing machines, and mechanical refrigerators would be manufactured again. Some of the more observing merchandise columnists, not-

ing that the announcement of these plans promised only that the government was working on a "program" to permit manufacture of such items, were not long in pointing out that it would take more than a "plan" "under study" to get action. They were right. The program appears to have bogged down, even the one for the production of electric irons, which were "positively" to be made.

In the meantime the breakdown of appliances proceeds apace and persons needing them have to resort to various inefficient and expensive expedients to carry on their accustomed jobs. One prominent Mid-west newspaper commented editorially on the case of a washing machine that could no longer wash clothes because the threads on a brass screw became worn and would not hold the agitator in place. The 30-cent screw that would put the machine back in service was not available. The editorial made the point that whether or not it was possible to release critical materials and manpower to make new washing machines, it was certainly *more economical* to allow sufficient parts to be made to keep present equipment running and in working order, than to let things drift. The fundamental trouble, of course, with the bureaucrat is that a 30-cent screw is beneath his threshhold of knowledge and action. If it were something worth a million dollars at a clip rather than a million dollars for a year's supply for everybody, he would no doubt be able to give some consideration to the matter.

Possibly the clue to the puzzle of why we have neither sufficient repair and replacement parts, radio tubes, and batteries, nor new sets and appliances was provided by Business Week, a McGraw-Hill publication for business executives. In a March issue, one of its experts on trends implied that those charged with the problem of supplying civilian needs had been gambling on the fact that the war with Germany would be over by fall, "in time," as the magazine put it, "to start diverting manpower and materials to consumers goods before the pinch gets too tight." There was a further suggestion in the Business Week article that those who had been acting on this basis were now beginning to worry about the possibility that they might have based their policy on the wrong premise. The conclusion clearly to be drawn is that little or nothing of a soundly-planned or practical nature has been done either to set in motion production of new appliances or to provide for production of the necessary repair parts and facilities for servicing appliances already in consumers' hands, to make certain of their continuing operation. Everything remains in the state of studies to be made or plans to be considered.

The Senate's Truman Committee has clearly recognized that in wartime the continued smooth production of necessary articles for the home front is second in importance only to production for the military fronts themselves; and in its third report, the Committee urged increasingly greater output of civilian goods to make use of rising supplies of materials and to prevent unemployment in areas where war contracts have been terminated or cut back. The Committee is convinced that manufacture of a considerable volume of civilian goods can be resumed without interfering with war production. They are right, of course, and would have been equally right had they said so much sooner, for the facts have been plain to people with an engineering knowledge of the problem, for many months.

BUY WAR BONDS AND STAMPS

"Authorities who have been in a position to affect civilian understanding sometimes have acted unwisely," states the Committee's report. "Civilian hysteria at home and a frenzy of additional conversion to war work will not help the men in the fighting lines." Another part of the report reads: "At the present stage of the war program every effort should be addressed to maintaining a high standard of living and to employing all our resources of basic materials, plant facilities and workers to the end that we will have the strongest possible economy, which can carry the burdens of war production and war taxation with the least dislocations, and, therefore, with the best prospect of being able to continue for as long as shall be necessary to assure a complete victory." The Committee's awareness of the dangers in governmental tendencies toward undue extension of controls over civilian consumption was well summed up in its caution that "we must not establish a pattern of regimentation for peacetime production, however good our intentions may be, because such regimentation will have a tendency to become permanent."

It has become increasingly clear in recent months that many directives that have come from official Washington have involved an element of "sacrifice for sacrifice's sake" or "we must all do without together." It is heartening, therefore, to discover such a powerful voice as that of the Truman Committee raised in behalf of the rights and needs of consumers. It is to be hoped that this report will be effective in hastening the end of red tape and bureaucratic indecision now impeding the actual production of essential parts for electrical appliances, washing machines, radio sets and phonographs, refrigerators, electric irons, and all the other thousand and one commonplace items that make up the peculiarly American and efficient character of modern civilian living in the United States of America.

Fine-Grain Photographic Developer

FINEX which sells at $2.75 for 16 ounces of developer and two 8-ounce bottles of replenisher is claimed by its manufacturer, Ansco, to be a remarkable fine-grain developer containing "a new developing agent which produces a smooth, even distribution of silver throughout the emulsion layer. Result: a great reduction in the clustering of silver particles . . .better, finer negatives without loss of film speed!"

Tests were made by exposing strips of *Finopan* and *Ultra-Speed Pan* film under tungsten light, and developing them in *Finex* according to the instructions, to a gamma of 0.6. A "control strip" of each film was exposed and developed in *Agfa 17* (a standard borax fine-grain developer) also to a gamma of 0.6 for comparison purposes. Despite the fact that the instructions for *Finex* were followed exactly, and the temperature of the solution was accurately controlled as specified, reticulation (wrinkling of the emulsion) resulted. It was found that the only way to prevent this was to substitute a chrome alum stop bath for the acetic acid stop bath which was recommended in the manufacturer's directions.

The *Finex*-developed films had a finer grain structure, but showed less resolving power (ability to reproduce fine detail) than did those developed in *Agfa 17*.

When examined under the microscope, the grains of *Finex*-developed films appeared to be smeared or spread into each other, which would give an enlargement a less grainy appearance than otherwise, but would make the effect slightly less sharp. With the relatively slow films such as *Finopan*, there was no loss in emulsion speed. With the faster film, *Ultra-Speed Pan*, there was an increase of emulsion speed.

A fine grain developer is not necessary for films which are to be used only for making direct prints. An enlarged print of considerable size made from a *Finex* negative will show some slight diffusion, while a similarly enlarged print from a negative processed in an "ordinary" developer will be sharper, but will have a slightly grainy pattern. The choice is therefore entirely a matter of which type of image one prefers in his enlargements. For an amateur who makes intermediate paper negatives, or for one who makes bromoils, either *Finex* or "ordinary" developer will be equally satisfactory.

Finex is a reasonably good fine grain developer, but expensive; its worst feature is its tendency to produce reticulation. If used with a chrome alum stop bath, it would warrant a *B. Intermediate* rating.

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Orange juicers (Dazey, 2-in-1)†....Mar., 8, 30

Paints, "plastic"†....Apr., 18-19
resin-and-casein type†....Mar., 21-23
Phonograph records*†....Jan., Feb., Mar., Apr.
Photographers, economy hint for....Mar., 10
Pillows, feather, washing....Apr., 3
Process cheese†....Jan., 10-12
Prune puree as substitute for jams....Apr., 29

Radio tubes, new racket in selling....Apr., 26
Roaches, getting rid of....Mar., 4
Rubber footwear†....Feb., 24-26

Screen patches (Snap-on)†....Apr., 30
Shine remover (Shyn-O-Way)†....Feb., 23
Shorts, men's†....Apr., 9-11
Sleep....Feb., 13-16
Soap flakes, avoiding waste of....Apr., 29-30
Soda in vegetable cookery....Feb., 9
Soups, dried†....Mar., 9-10
Suits, men's†....Mar., 5-8

Tooth powders†....Jan., 13-15

Vitamin preparations....Feb., 5-9; Mar., 11-14†
Vitamins....Jan., 3, 12, 25, 26; Feb., 3, 9; Mar., 29

Walking, hygiene, footwear, accessories....Mar., 17-21
Wallpaper, grease-spot remover (Blot-X)†....Apr., 8
Weatherstripping†....Feb., 18-19
Wine, increased consumer demand....Apr., 4
Wool, reclaimed....Feb., 4

† indicates that brand listings are included.
* indicates articles that appear each month in the Bulletin.

Ratings of Motion Pictures

This section aims to give critical consumers a digest of opinion from a number of reviews, ranging from the motion picture trade press to Parents' Magazine, which rates motion pictures not only on their quality as entertainment but on their suitability in various aspects for children.

It should be emphasized that the motion picture ratings which follow do not represent the judgment of a single person but are based on an analysis of the reviews appearing in some 20 different periodicals. (See January 1944 issue for sources of the reviews.)

The figures preceding the title of the picture indicate the number of critics who have been judged to rate the film A (recommended), B (intermediate), and C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
soc—social-problem drama
t—in technicolor
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C		
—	5	2	**Action in Arabia**	*war-mel AYC*
—	2	1	**Adventure in Blackmail**	*com A*
—	1	6	**Adventure in Iraq**	*war-mel A*
1	3	—	**Adventure in Music**	*mus AYC*
—	12	2	**Ali Baba and the 40 Thieves**	*mel-t AYC*
—	1	8	**Always a Bridesmaid**	*mus-com AYC*
—	3	1	**Andy Hardy's Blond Trouble**	*com AYC*
—	2	2	**Arizona Whirlwind**	*wes AYC*
—	6	2	**Around the World**	*war-mus-com AYC*
—	1	2	**Avenging Rider, The**	*wes AYC*
—	3	4	**Beautiful But Broke**	*mus-com AYC*
—	2	3	**Beyond the Last Frontier**	*wes AYC*
—	3	3	**Billy the Kid in Cattle Stampede**	*wes AYC*
—	4	1	**Billy the Kid in the Renegade**	*wes AYC*
—	6	—	**Black Hills Express**	*wes AYC*
—	5	1	**Blazing Guns**	*wes AYC*
—	6	6	**Bridge of San Luis Rey**	*dr AYC*
—	6	2	**Broadway Rhythm**	*mus-com-t AYC*
1	5	1	**Buffalo Bill**	*wes-biog-t AYC*
1	2	—	**Bullets and Saddles**	*wes AYC*
—	4	1	**California Joe**	*wes-dr A*
—	8	3	**Calling Dr. Death**	*mys-mel A*
—	2	4	**Campus Rhythm**	*mus-com AYC*
—	2	4	**Canyon City**	*wes AYC*
—	—	10	**Career Girl**	*mus-com A*
—	4	5	**Casanova in Burlesque**	*mus-com A*
—	6	3	**Chance of a Lifetime**	*cri-mel AYC*
—	2	2	**Charlie Chan in the Chinese Cat**	*cri-mel AYC*
—	3	5	**Charlie Chan in the Secret Service**	*cri-mys AYC*
—	9	3	**Chip Off the Old Block**	*mus-com AYC*
1	2	1	**City That Stopped Hitler, The**	*war-doc A*
3	12	1	**Corvette K-225**	*war-mel AYC*
—	2	6	**Courageous Mr. Penn**	*hist-dr AYC*
3	5	2	**Cover Girl**	*mus-com-t A*
—	5	—	**Cowboy and the Senorita**	*mus-wes AYC*
—	3	4	**Cowboy in the Clouds**	*war-mel AYC*
—	10	5	**Crazy House**	*mus-com AYC*
—	3	3	**Crime Doctor's Strangest Case**	*cri-mel A*
—	11	7	**Cross of Lorraine, The**	*war-mel A*
3	5	7	**Cry Havoc**	*war-dr A*
—	4	6	**Curse of the Cat People, The**	*mys-mel A*
—	7	5	**Dancing Masters, The**	*com AYC*
—	9	1	**Dangerous Blondes**	*cri-com A*
—	1	3	**Death Rides the Plains**	*wes AYC*
1	1	2	**Death Valley Manhunt**	*wes AYC*
—	1	4	**Death Valley Rangers**	*wes AYC*
—	2	5	**Deerslayer**	*adv AYC*
2	9	4	**Desert Song, The**	*war-mus-mel-t A*
10	4	—	**Destination, Tokyo**	*war-dr AYC*
—	3	2	**Devil Riders**	*wes AYC*
—	5	5	**Doughboys in Ireland**	*mus-com AYC*
—	1	7	**Drums of Fu Manchu**	*mel AYC*
—	6	2	**Escape to Danger**	*war-mel A*
—	6	4	**Falcon and the Co-eds, The**	*cri-mys AY*
—	4	2	**Falcon Out West, The**	*cri-mys A*
—	6	1	**False Colors**	*wes AYC*
2	9	3	**Fighting Seabees, The**	*war-mel AYC*
—	3	2	**Fighting Valley**	*mus-wes AYC*
—	1	7	**Find the Blackmailer**	*mys-mel A*
1	5	6	**Fired Wife**	*com A*
3	10	5	**Flesh and Fantasy**	*dr A*
—	—	6	**Follies Girl**	*mus-com A*
—	3	1	**Follow the Boys**	*war-mus-com AYC*
1	3	3	**Footlight Glamour**	*com A*
—	4	4	**Four Jills in a Jeep**	*war-mus-com A*
—	10	5	**Gang's All Here, The**	*mus-com-t A*
—	6	4	**Gangway for Tomorrow**	*war-dr-propaganda A*
—	4	7	**Ghost Ship, The**	*mel A*
—	1	4	**Ghost That Walks Alone**	*cri-com A*
—	1	7	**Gildersleeve on Broadway**	*com A*
—	5	2	**Girl from Monterey, The**	*mus-com AY*
3	4	—	**Going My Way**	*mus-dr AYC*
—	6	9	**Government Girl**	*war-com A*
—	4	4	**Great Mr. Handel, The**	*mus-biog-t AYC*
8	7	2	**Guadalcanal Diary**	*war-dr AY*
4	9	3	**Gung Ho**	*war-dr A*
1	12	3	**Guy Named Joe, A**	*war-dr A*
—	3	3	**Hail to the Rangers**	*mus-wes AYC*
2	6	—	**Hands Across the Border**	*mus-wes AYC*
4	10	3	**Happy Land**	*war-dr AYC*
—	3	4	**Harvest Melody**	*mus-com AYC*
—	3	3	**Hat-Check Honey**	*mus-com AYC*
—	4	11	**Heat's On, The**	*mus-com A*
—	5	8	**Heavenly Body, The**	*com A*
—	5	6	**Henry Aldrich, Boy Scout**	*com AYC*
1	5	5	**Henry Aldrich Haunts a House**	*com AYC*
—	1	3	**Her Primitive Man**	*com A*
—	7	1	**Here Comes Elmer**	*mus-com A*
—	2	2	**Heroes Are Made**	*war-mel A*
—	4	—	**Hey, Rookie**	*war-mus-com AYC*
—	4	1	**Hi, Good Lookin'**	*mus-com AYC*
—	3	4	**Hi 'Ya Sailor**	*mus-com A*
—	15	3	**Higher and Higher**	*mus-com A*
1	14	2	**His Butler's Sister**	*mus-dr AYC*
—	3	1	**Hot Rhythm**	*mus-com AYC*
1	3	2	**Hour Before Dawn, The**	*war-dr AYC*
—	8	5	**Imposter, The**	*war-dr A*
—	11	4	**In Old Oklahoma**	*mus-dr A*
—	8	4	**In Our Time**	*war-dr AYC*
1	11	3	**Iron Major, The**	*biog AYC*
—	2	6	**Is Everybody Happy?**	*war-mus-dr AYC*
—	1	3	**Isle of Forgotten Sins**	*adv A*
—	4	3	**It Happened in Gibraltar**	*war-mel A*
1	7	—	**It Happened Tomorrow**	*com A*

A	B	C		
—	8	6	**Jack London**	*biog A*
—	2	1	**Jam Session**	*mus-com A*
—	3	—	**Jamboree**	*mus-com AYC*
4	13	3	**Jane Eyre**	*nov A*
1	5	1	**Jeannie**	*rom AYC*
—	4	3	**Jive Junction**	*mus-dr AYC*
—	—	8	**Klondike Kate**	*mel A*
1	4	1	**Knickerbocker Holiday**	*mus-com AYC*
—	1	9	**Ladies Courageous**	*war-dr A*
—	4	2	**Lady and the Monster, The**	*mys-mel A*
1	12	3	**Lady in the Dark**	*mus-com-t A*
—	2	3	**Lady in the Death House**	*mys-mel A*
—	6	—	**Lady, Let's Dance**	*mus-com AYC*
—	2	8	**Larceny With Music**	*mus-com A*
2	1	—	**Life and Death of Col. Blimp**	*war-dr A*
5	10	3	**Lifeboat**	*war-dr A*
—	11	5	**Lodger, The**	*cri-mel A*
—	3	2	**Lone Star Trail, The**	*wes AYC*
3	10	2	**Lost Angel**	*com AYC*
—	2	1	**Lumberjack**	*wes AYC*
—	3	8	**Mad Ghoul, The**	*cri-mel A*
12	7	—	**Madame Curie**	*biog AYC*
1	8	1	**Man from Music Mountain**	*mus-wes AYC*
—	2	3	**Man from Rio Grande, The**	*wes AYC*
—	3	—	**Man from Thunder River**	*wes AYC*
—	1	2	**Meet the People**	*war-mus-com A*
2	3	—	**Memphis Belle, The**	*war-doc-t AYC*
—	1	5	**Men on Her Mind**	*mus-dr A*
—	3	4	**Million Dollar Kid**	*com A*
—	3	7	**Minesweeper**	*war-mel AYC*
2	7	8	**Miracle of Morgan's Creek, The**	*com A*
—	3	—	**Mojave Firebrand**	*wes AYC*
—	2	1	**Monster Maker, The**	*mel A*
—	1	3	**Moon Over Las Vegas**	*com A*
—	5	4	**Moonlight in Vermont**	*mus-com AYC*
—	2	5	**Mr. Muggs Steps Out**	*cri-com AYC*
—	1	3	**My Best Gal**	*mus-dr AYC*
—	11	3	**My Kingdom for a Cook**	*com A*
—	6	4	**Mystery Broadcast**	*mys A*
—	3	6	**Mystery of the 13th Guest, The**	*mys-mel A*
—	1	6	**Nabonga**	*mel AYC*
—	5	1	**Navy Way, The**	*war-mel AYC*
—	3	5	**Nearly Eighteen**	*mus-com A*
—	5	2	**Never a Dull Moment**	*mus-com AYC*
—	6	3	**Nine Girls**	*cri-mys A*
—	6	4	**No Greater Love**	*war-dr A*
2	14	2	**No Time for Love**	*com A*
1	8	4	**None Shall Escape**	*war-mel A*
4	10	4	**North Star, The**	*war-dr-propaganda A*
—	8	9	**Northern Pursuit**	*war-mel AYC*
—	2	1	**Oklahoma Raiders**	*mus-wes AYC*
—	2	6	**O, My Darling Clementine**	*mus-com A*
1	11	5	**Old Acquaintance**	*dr A*
—	1	2	**Outlaws of Stampede Pass**	*wes AYC*
—	4	2	**Overland Mail Robbery**	*wes AYC*
—	7	3	**Paris After Dark**	*war-mel A*
—	2	2	**Partners of the Trail**	*wes AYC*
—	11	7	**Passage to Marseille**	*war-mel A*
—	5	3	**Passport to Adventure**	*war-com A*
—	1	9	**Petticoat Larceny**	*cri-mel A*
2	13	1	**Phantom Lady**	*mys-mel A*
—	4	6	**Pistol Packin' Mama**	*mus-wes A*
—	5	1	**Pride of the Plains**	*wes AYC*
1	14	—	**Princess O'Rourke**	*rom AYC*
3	8	5	**Purple Heart, The**	*war-dr A*
—	2	5	**Racket Man, The**	*cri-mel AYC*
—	3	—	**Raiders of Sunset Pass**	*wes AYC*
—	3	3	**Raiders of the Border**	*wes AYC*
—	5	5	**Rationing**	*com AYC*
—	2	2	**Return of the Rangers**	*mus-wes AYC*
—	5	4	**Return of the Vampire**	*mys-mel A*
—	3	4	**Riders of the Deadline**	*wes AYC*
—	2	4	**Riders of the Rio Grande**	*wes AYC*
—	11	7	**Riding High**	*mus-com-t A*
—	3	2	**Rosie, the Riveter**	*mus-com A*
—	4	5	**Rookies in Burma**	*war-com AYC*
5	13	—	**Sahara**	*war-dr AYC*
—	1	4	**Sailor's Holiday**	*war-com A*
—	1	7	**Scream in the Dark, A**	*mys A*
2	11	—	**See Here, Private Hargrove**	*war-com AYC*
1	6	4	**Sherlock Holmes Faces Death**	*cri-mel AYC*
—	3	4	**She's for Me**	*mus-com A*
—	6	3	**Shine On, Harvest Moon**	*mus-biog-t AYC*
—	3	3	**Silver City Raiders**	*wes AYC*
—	2	4	**Sing a Jingle**	*mus-com AYC*
—	3	—	**Six-Gun Gospel**	*wes AYC*
—	2	4	**Smart Guy**	*cri-dr A*
—	6	5	**Son of Dracula**	*mel A*
9	7	—	**Song of Bernadette, The**	*dr AYC*
1	10	5	**Song of Russia**	*war-dr AYC*
—	5	5	**So's Your Uncle**	*com AYC*
—	9	3	**Spider Woman**	*cri-mel A*
—	12	3	**Standing Room Only**	*war-com A*
—	3	6	**Strange Death of Adolph Hitler, The**	*war-mel A*
4	10	—	**Sullivans, The**	*war-dr AYC*
—	3	6	**Sultan's Daughter, The**	*mus-com A*
—	2	5	**Suspected Person**	*mys A*
—	1	5	**Sweethearts of U.S.A.**	*mus-com AYC*
2	13	2	**Sweet Rosie O'Grady**	*mus-com-t A*
—	4	8	**Swing Fever**	*mus-com A*
—	3	5	**Swing Out the Blues**	*mus-com AYC*
—	2	9	**Swingtime Johnny**	*mus-com A*
—	2	2	**Tampico**	*war-mel A*
—	4	8	**Tarzan's Desert Mystery**	*war-adv AYC*
2	6	5	**Tender Comrade**	*war-dr A*
—	3	3	**Texas Kid, The**	*wes AYC*
—	5	—	**Texas Masquerade**	*wes AYC*
—	9	1	**There's Something About a Soldier**	*war-com AYC*
—	—	—	**Thirteenth Guest (See Mystery of)**	
—	2	1	**This Is the Life**	*rom AYC*
6	12	—	**Thousands Cheer**	*war-mus-t AYC*
—	4	6	**Three Russian Girls**	*war-dr AYC*
—	1	6	**Tiger Fangs**	*war-mel AYC*
—	2	6	**Timber Queen**	*mel AYC*
1	10	3	**Top Man**	*war-mus-com AYC*
—	3	—	**Trail of Terror**	*mus-wes AYC*
—	2	1	**Trocadero**	*mus-com AYC*
2	3	—	**Tunisian Victory**	*war-doc AYC*
—	1	3	**Two-Man Submarine**	*war-mel AYC*
—	4	2	**Uncensored**	*war-mel A*
—	3	2	**Uncertain Glory**	*war-mel A*
—	1	5	**Underdog, The**	*mel AYC*
—	14	4	**Uninvited, The**	*mys-mel A*
1	8	2	**Unknown Guest, The**	*mel A*
1	12	1	**Up in Arms**	*war-mus-com-t A*
—	3	2	**Up in Mabel's Room**	*com A*
—	2	1	**Vigilantes Ride, The**	*mus-wes AYC*
3	6	4	**Voice in the Wind**	*war-dr A*
—	1	6	**Voodoo Man, The**	*mys-mel A*
—	3	2	**Wagon Tracks West**	*wes AYC*
—	4	5	**Weekend Pass**	*war-mus-com AYC*
—	2	1	**Weird Woman**	*cri-mys A*
—	1	2	**West of Texas**	*mus-wes AYC*
—	3	3	**Westward Bound**	*wes AYC*
—	2	6	**What a Man!**	*com A*
—	14	3	**What a Woman!**	*com A*
—	6	7	**Where Are Your Children?**	*mel A*
—	3	3	**Whispering Footsteps**	*mys-mel A*
—	2	1	**Whistler, The**	*mys-mel A*
—	8	5	**Whistling in Brooklyn**	*cri-com AYC*
2	3	—	**White Cliffs of Dover**	*war-dr AYC*
—	6	8	**Wintertime**	*mus-com AYC*
1	10	2	**Woman of the Town, The**	*mus-wes A*
—	5	3	**Women in Bondage**	*war-dr A*
—	6	—	**You Can't Ration Love**	*mus-com AYC*
—	2	1	**Young Man's Fancy, A**	*com A*

The Consumers' Observation Post

[Continued from page 4]

HOW TO COOK VEGETABLES in order to preserve their vitamin content to the fullest extent is receiving considerable attention these days. Experiments at the University of Illinois indicate that the most effective method is to use minimal amounts of water and a tight lid for retention of the condensed steam. Fresh peas, carrots, potatoes, and broccoli cooked by this method lost less than 10 percent of their vitamins and 5 percent of their minerals, while the same vegetables cooked by the old-fashioned method with lots of water and free escape of steam lost 31 percent of their vitamins and 12 percent of their minerals. Another method for maximum preservation of minerals is the Chinese practice of sauteing vegetables for 6 to 9 minutes in a small amount of fat, suggested in the report of a cookery study at Oregon State College.

* * *

HAIR-DOS that draw portions of the hair too tightly may cause marginal "molting," cautions Dr. Irving S. Cutter, well-known medical columnist. Whenever the locks are held in an abnormal position by pins, combs, or ribbons, the tiny muscles about the roots wear out and let go. The result is that the hair will show thinning or denuding in spots, particularly around the edges.

* * *

BEFORE STARTING YOUR VICTORY GARDEN in a vacant lot, be sure that the owner has given his permission for the project. The U. S. Department of Agriculture reports that last year several complaints were received from gardeners who planted first and found out their rights, or lack of them, afterwards when the owner demanded a high rent for the use of his land.

* * *

JUST HOW MUCH VITAMIN B_1 (thiamin) is actually needed by human beings is a question raised by studies made with human beings at the University of Minnesota by Ancel Keys and co-workers which indicated that half the amount recommended by the Food and Nutrition Board of the National Nutrition Council would apparently suffice—at least for short periods. From another source comes word that unpublished research at the Navy's medical center suggests that, since three of the B vitamins, thiamin, folic acid, and biotin, are synthesized within the human body under favorable conditions, possibly the whole question of official findings with reference to human needs for supplementary intake of vitamins ought to be examined anew, with more checking and attention to details than characterized the earlier work.

As welcome as flowers that bloom in the spring

is the news that

CR's Annual Cumulative Bulletin

will again be issued!

Scheduled to make its appearance again in September 1944, this 160-page volume will provide a convenient summary of the essential information that consumers need for intelligent, economical buying in many fields. Ask the subscriber who has had one how helpful the Annual Cumulative Bulletin can be—what mistakes and losses in purchasing can be avoided by its use.

Here are the principal fields in which brand listings, do's and dont's for the informed buyer and how to care for and repair irreplaceable items will be presented in concise, informative fashion:

Food Medicine and Hygiene Cosmetics
Household Appliances, Equipment, Supplies
Textiles and Clothing Radio Sets
Heating Equipment and Fuel Cameras
House Maintenance, Repair, Building, Plumbing
Automobiles, Accessories, and Supplies

A convenient order blank is provided on the next page.

NEW PRODUCTS: Pressure canners of pre-war quality are expected to be available for the 1944 canning season. Six manufacturers have been authorized to produce the new canners in two sizes: one holds 7 one-quart jars, and one holds 14 one-quart jars; three-fourths of the production is to be in the smaller size. By permission of the WPB, use of aluminum will be permitted, though use of aluminum has been prohibited in manufacture of pressure canners since 1942. The new canners will not be rationed and anyone who wishes to purchase one for canning of food products may do so without the use of a purchase certificate. Burpee Can Sealer Co., Barrington, Illinois, is producing a canner of wrought aluminum, a material which has some advantages as compared with cast aluminum. The Wisconsin Aluminum Foundry Co., Manitowoc, Wisconsin; The National Pressure Cooker Co., Eau Claire, Wisconsin; and the Lakeside Aluminum Co., Minneapolis, Minn., will produce cast aluminum cookers either identical or practically identical with their pre-war models. The ceiling prices set by the OPA may be as high as $17.80 for the seven-quart size and $22 for the 14-quart size depending on the model. Any of these canners should be very much more satisfactory than the "war-models" which used tinned steel or enameled steel. Distribution of the canners is to begin in the Southern states, where the canning season opens earlier, and is to move northward gradually thereafter.

Trimz Wall Border, in a variety of colors and patterns and in several widths, is making an extensive appearance in the five-and-dime stores. It makes an attractive border for a kitchen, bathroom, or even a bedroom, and is readily applied since it is already gummed on the back. Directions call for immersing the strip to be applied in warm water, allowing it to drain, and then applying. Since the paper has low tensile strength when wet, it is necessary to handle it carefully or it may tear from its own weight. A long strip is somewhat awkward to handle and the application job can be more readily done by two people. Check tests made in CR's laboratory and in actual use indicate that while the strips will adhere satisfactorily to some surfaces, such as well-affixed wallpaper or a non-glossy wallboard, the border comes loose in a comparatively short time when applied to slightly rough plaster or over a surface painted with a glossy wall paint. Furthermore this tendency will be accelerated if the room is small and there is considerable dampness from bathing or from clothes hung up to dry, or steam from canning or preserving or a boiling teakettle on the kitchen stove, for example. The strip comes off fairly cleanly when it becomes loosened so that the walls may not suffer in appearance from the experiment, but some time, effort, and money will have been wasted in applying it. The price of Trimz varies according to width, from 15 to 29 cents for a 12-foot roll.

convenient subscription blank

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PHONOGRAPH RECORDS

By Walter F. Grueninger

Please Note: Prices quoted do not include taxes. In the ratings AA indicates highly recommended; A, recommended; B, intermediate; C, not recommended.

RECORD surfaces are likely to improve soon. The WPB has just released sufficient shellac to equal the "normal" amount used by manufacturers in 1941 making it unnecessary, it is held, to continue the use of scrap. Greater quantities of records are not yet in sight, however, because of production problems.

ORCHESTRA

Bach: *Prelude and Fugue in E Flat Major* ("St. Ann"). Chicago Symphony Orchestra under Stock. 4 sides, Victor Set 958. $2.50. An excellent transcription by conductor Stock of a thrilling organ work. For the connoisseur who does not object to transcriptions. Sides 2 and 3 have swishes.
Interpretation A
Fidelity of Recording A

Bach-Stokowski: *Preludio* & **Mendelssohn:** *Midsummer Night's Dream—Scherzo.* All American Orchestra under Stokowski. 2 sides, Columbia 11983-D. $1. The *Preludio* sounds better when played by an unaccompanied violin, as Bach intended, in Menuhin's Victor Set 488. The racy *Scherzo* overside lacks refinement and the recording of the violins is shrill. Better is the Cleveland Orchestra's *Scherzo* in Columbia Set 504.
Interpretation B
Fidelity of Recording B

Beethoven: *Symphony No. 9* ("Choral"). Vienna Philharmonic Orchestra and the Vienna State Opera Chorus under Weingartner. 16 sides, Columbia Set 227. $8.50. A powerful performance of Beethoven's last symphony now released in a new colorful album as a Record Classic. The recording fails to match the competitive Victor Set 236 but the performance surpasses it.
Interpretation A
Fidelity of Recording B

Coates: *Cinderella* (3 sides). London Philharmonic Orchestra. & *Footlights* (1 side). Light Symphony Orchestra under Coates. Columbia Set X239. $2.50. Light music. The high frequencies are more prominent than in any other English recording I have heard, the bass is fuller than ours, but the dynamic range (variation of loudness level) is small. Quiet surfaces.
Interpretation AA
Fidelity of Recording A

Stravinsky: *Le Sacre du Printemps.* Philharmonic Symphony Orchestra of New York under Stravinsky. 8 sides, Columbia Set 417. $4.50. First issued in 1940 on surfaces that today sound a trifle less noisy than those of this Record Classic. The music, composed for a ballet, is not likely to appeal to those who dislike "modern" music.
Interpretation AA
Fidelity of Recording AA

Four Favorite Waltzes. Columbia Broadcasting Symphony under Barlow. 4 sides, Columbia Set X240. $2.50. Included are Strauss' *Blue Danube* and *Vienna Woods*, Sibelius' *Valse Triste*, Tchaikovsky's *Waltz of the Flowers.* The Strauss compositions are abbreviated but that will not prevent this album from meeting the demand of thousands for these outstanding waltzes which are well played and recorded. Quiet surfaces.
Interpretation AA
Fidelity of Recording A

CONCERTO

Mozart: *Concerto No. 12.* Kentner (piano) and the London Philharmonic Orchestra under Beecham. 6 sides, Columbia Set 544. $3.50. A charming, reserved, melodious, typically Mozart concerto. Recorded sometime ago in England at a low volume level. The piano sounds rather wooden, the orchestra thin. Surfaces are audible. Compared to the competitive Decca set, however, the fidelity of the Columbia set is superior, the performance about equal, the surfaces less noisy.
Interpretation A
Fidelity of Recording B

CHAMBER & INSTRUMENTAL

Beethoven: *Quartet No. 15 (Op. 132).* Budapest String Quartet. 10 sides, Columbia Set 545. $5.50. Sometimes regarded as one of the greatest works in the literature. For advanced listeners. Breath-taking performance. Quiet surfaces. At times the recording tends toward coarseness but not unduly so. Overall, best *Opus 132* on records.
Interpretation AA
Fidelity of Recording A

Chopin: *The Maiden's Wish* & *The Return Home* & **Schumann:** *The Smuggler.* Rachmaninoff (piano). 2 sides, Victor 11-8593. $1. Fast, short numbers played by a master.
Interpretation AA
Fidelity of Recording A

Mozart: *Divertimento in E Flat Major* (K563). Heifetz, Primrose, Feuermann (violin, viola, cello). 8 sides, Victor Set 959. $4.50. Enchanting, if not "important," music played by three virtuosi blended into a remarkable ensemble. Quiet surfaces, praiseworthy recording balance. Also played beautifully by the Pasquier Trio in Columbia Set 351 which is recorded at a lower volume level and on 2 additional sides.
Interpretation AA
Fidelity of Recording AA

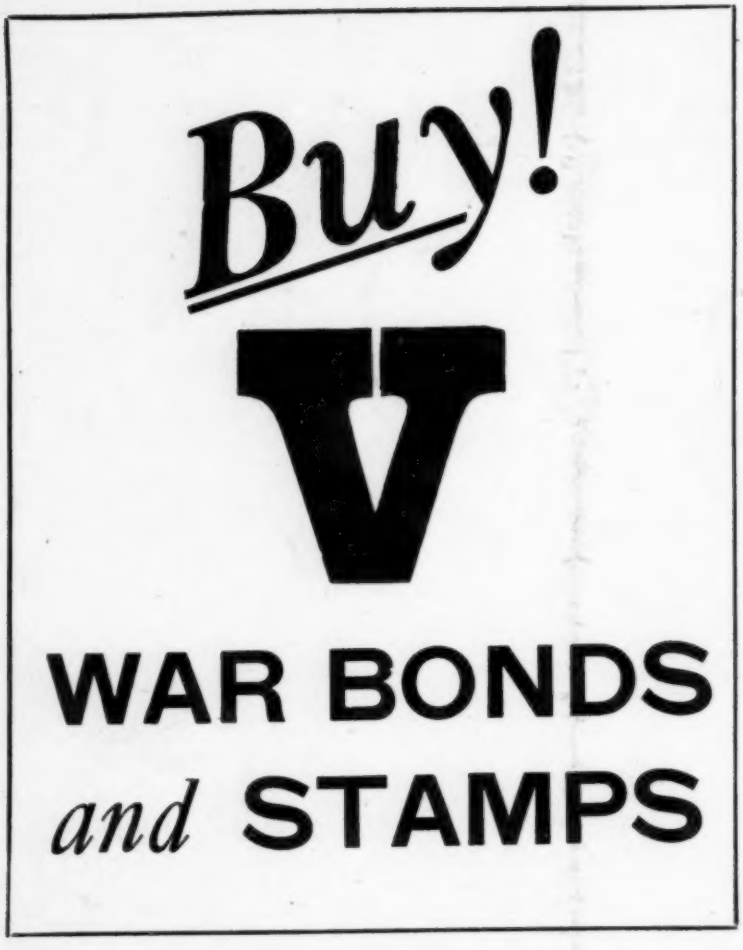
Reubke: *Organ Sonata in C Minor* (on the 94th Psalm) (5 sides) & **Purcell:** *Trumpet Voluntary* (1 side). E. Power Biggs (organ). Victor Set 961. $3.50. Reubke, a talented pupil of Franz Liszt, died in 1858 at the age of 24. This work, like some of Liszt's, is built on one theme. The organ of the Memorial Church of Harvard University is clearly recorded, though reproduction is lacking in wide dynamic contrasts. On the whole, a welcome recording. So is the stately *Voluntary.*
Interpretation A
Fidelity of Recording A

Wieniawski: *Scherzo Tarantelle* & **Suk:** *Burleske.* Milstein (violin). 2 sides, Columbia 71498-D. $1. Two brilliant show pieces of identical construction—rapid section, followed by a melodious contrasting middle section, then the return to the opening section. The Wieniawski is an old favorite. Played by a virtuoso for all they are worth. The recorded tone of the violin is rather piercing; the recording chamber sounds empty; my Suk swishes half the way.
Interpretation AA
Fidelity of Recording A

LIGHT, POPULAR, AND MISCELLANEOUS

Allan: *Behind Those Swinging Doors* Waltz. Spike Jones & His City Slickers & **Turk-Ahlert:** *I'll Get By.* Four King Sisters. 2 sides, Bluebird 30-0821. 35c. The Slickers, in a vocal and Gay Nineties takeoff, are terribly dull. Overside, the female quartet, too, justifies little admiration. Surfaces gritty.
Interpretation B
Fidelity of Recording A

Strayhorn: *Johnny Come Lately* & **Ellington:** *Main Stem.* Duke Ellington & His Famous Orchestra. 2 sides, Victor 20-1556. 50c. Two fast stepping slam-bang foxtrots. Quiet surfaces. No vocals.
Interpretation AA
Fidelity of Recording AA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